DISSERTATION ON

TO IDENTIFY THE RISK FACTORS ASSOCIATED WITH INFERTILITY AMONG WOMEN ATTENDING INFERTILITY CLINIC AT INSTITUTE OF OBSTETRICS AND GYNECOLOGY, EGMORE, CHENNAI -8.

M.SC (NURSING) DEGREE EXAMINATION
BRANCH – III
OBSTETRICS AND GYNECOLOGICAL NURSING

COLLEGE OF NURSING
MADRAS MEDICAL COLLEGE, CHENNAI – 03.

A dissertation submitted to

THE TAMILNADU DR.M.G.R. MEDICAL UNIVERSITY, CHENNAI – 600 032.

In partial fulfillment of the requirement for the degree of

MASTER OF SCIENCE IN NURSING

JULY 2011

CERTIFICATE

This is to certify that this dissertation titled, **"TO IDENTIFY THE RISK FACTORS ASSOCIATED WITH INFERTILITY AMONG WOMEN ATTENDING INFERTILITY CLINIC AT INSTITUTE OF OBSTETRICS AND GYNECOLOGY, EGMORE, CHENNAI -8."** is a bonafide work done by **Mrs.J.Judith Mary,** College of Nursing, Madras Medical College, Chennai – 03, submitted to the Tamilnadu Dr.M.G.R. Medical University, Chennai in partial fulfillment of the university rules and regulations towards the award of the degree of Master of Science in Nursing, Branch III, obstetrics and Gynecological Nursing Under our guidance and supervision during the academic period from 2009 – 2011.

Dr.Mrs.P.MANGALA GOWRI,
M.Sc (N)., Ph.D.,
Principal, College of Nursing,
Madras Medical College,
Chennai - 60003.

Dr.V.KANAGASABAI, **M.D.,**
Dean,
Madras Medical College,
Chennai - 60003.

TO IDENTIFY THE RISK FACTORS ASSOCIATED WITH INFERTILITY AMONG WOMEN ATTENDING INFERTILITY CLINIC AT INSTITUTE OF OBSTETRICS AND GYNECOLOGY, EGMORE, CHENNAI -8.

Approved by Dissertation committee on _____

PROFESSOR IN NURSING RESEARCH

Dr.Mrs.P.MANGALA GOWRI, M.Sc (N), Ph.D., _____
Principal,
College of Nursing,
Madras Medical College,
Chennai – 03.

CLINICAL SPECIALITY GUIDE

PROF.DR.MRS.N.JAYA, M.A,MSc (N),Ph.D _____
Principal
College of Nursing,
Govt MohanKumaraMangalam Medical College
Salem

MEDICAL EXPERT

Dr. T.RADHA BAI PRABHU., M.D., D.G.O., Ph.D., _____
Director,
Institute of Obstetrics and Gynaecology,
Chennai 600008

.

A dissertation submitted to

THE TAMILNADU DR.M.G.R. MEDICAL UNIVERSITY, CHENNAI – 600 032.

In partial fulfillment of the requirement for the degree of

MASTER OF SCIENCE IN NURSING

JULY 2011

ACKNOWLEDGEMENT

"***Gratitude is an art of painting an adversity into a lovely picture***."

-Kak Sri

There is not a more pleasing exercise of the mind than gratitude. It is accompanied with such an inward satisfaction that the duty is sufficiently rewarded by the performance. It is indeed my duty to show my sense of gratitude in words to all the helpful hearts for their contribution towards my completion of this dissertation.

Primacy is always to the eternal one and I thank the almighty for showering his blessings, and giving me the courage to make this a complete and successful study.

This dissertation has its creation with many helping hands and thoughts of many professional experts. The investigator has a deep sense of obligation to all those eminent personalities for their involvement.

I am indebted to **Prof.Dr.P.Mangala Gowri MSc(N)., Ph.D**., principal, College of Nursing, Madras Medical College, Chennai for giving me this opportunity to conduct this study. I also thank her for her constant guidance, support and timely renderance of valuable suggestions which were seeds of encouragement to flourish this study fruitfully.

I am grateful to **Prof.Dr.V.Kanagasabai**,**MD** Dean, Madras Medical College, Chennai-3 for providing the necessary facilities and extending his support to conduct this study.

I owe my heart felt thanks to my eminent teacher Prof. **Dr.N.Jaya.M.A,MSc** (N)., Ph.D Principal, College of Nursing, Govt.MohanKumaraMangalam Medical college- Salem, for all her guidance, assistance support and encouragement in pursuing the study.

It is my duty to thank **Mrs.Alphonsa.J.** MSc (N),Lecturer, College of Nursing, Madras Medical College, for all her support and assistance throughout the study.

I have to thank **Mrs.R.Saroja** MSc (N),Lecturer, College of Nursing, Madras Medical College, for all her guidance and timely support to complete this study

I am grateful to **Dr.V.Kumari** MSc (N), Ph.D Lecturer, College of Nursing, Madras Medical College, for all her support and assistance throughout the study.

I express my thanks to all the faculty members of the College Of Nursing, Madras Medical College, Chennai-3 for the support and assistance given by them in all possible manners for the successful completion of this study.

I with great gratitude, share my heart felt thanks to **Prof**.**Dr.T.Radha Bai Prabhu** M.D, DGO, FRCOG, FRCS Director of Institute of Obstetrics and Gynecology ,Hospital for women and children for granting permission to conduct the study.

I am indebted to **Dr.C.Susheela**, Principal, Billroth College of Nursing,and **Mrs.Safrina**, Assistant Professor,A.J.college of Nursing,for validating my tool for its usage in this study.

I extend my deepest sense of gratitude to **Mr.A.Venkatesan** Msc., M.Phil.(Statistics) P.G.D.C.A lecturer in statistics, Madras medical college, Chennai-3 for rendering all guidance and support in statistical analysis.

I extend my thanks to **Mr.Ravi**, B.A,B.L.I.sc., librarian, college of nursing, madras medical college, Chennai-3 for his co-operation and assistance which built the sound knowledge for this study.

I extend my deepest sense of gratitude to **Mrs.Christiana Rathnavathy** M.A. English. Literatur Sec. Grade Asst.MCC Higher Sec. School, for validating the English content of my study.

Above all the investigator would like to express her deepest gratitude to all the staff members who worked in the infertility clinic, specially the women who had, enthusiastically participated in this study, without whose participation it would not have been possible for her to complete this study.

I render my deep sense of gratitude to my husband and all my family members and friends for their immense love, support, prayer and encouragement which inspired me to reach this point in my life.

I thank **Mr.Ahmed** (Raazya Graphics) and Newstar Xerox for their help and patience in printing and completing this dissertation work.

CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

CHAPTER-I
INTRODUCTION

"It is marvelous that we are the only species that create gracious forms. To create is Divine, to reproduce is Human" -Man Ray

Reproduction is the gift of God to all living creations. God created this world for all his living creations to reproduce and fill and flourish it. Each human, on his birth is gifted a life. And each new day is added to his life not only to live but to bring out offspring's of him and double the happiness of him. Reproduction is that process where a living organism with the union of another of its own kind produces a new young one. Fertility, according to the Longman Dictionary of Contemporary English, refers to the condition or state of being fertile, that is being able to produce many young, fruits or seeds. In the past, fertility was very important to the people. For instance, the people of the Indus Valley in India were believed to have worshipped the Mother Goddess, who was a symbol of fertility.

Fertility plays a vital role in a woman's life. In our tradition fertility is the most important part of marital life. The feeling of being conceived is wonderful, and the mother is bound with joy on the first kick of her child inutero. Loss of this precious aspect, indeed results in stress. With so much of technological advancements and other newer inventions in the field of science, reproduction is still a dream to many women. "Infertility" is the name of this dream. When fertility is disturbed the women ultimately ends up stress.

As per Perry.E.Shannon infertility is the inability to become pregnant even after one year of unprotected sex. Both men and women contribute to this threat. It is broadly classified into two types, Primary infertility and secondary infertility. Primary infertility is that where a woman has not conceived even once in her life time. Secondary infertility is one where woman has conceived at least once irrespective of the pregnancy outcome. Infertility is a global health issue. It is not a newly emerging issue, it has its

crux from the olden days. It is a pre –existing problem and a threat to the social integration of Families.

Infertility is becoming more and more a social issue in today's world. Being a problem which exist from the past, its magnitude is increasing day by day. The impact of this problem contributes a lot to the disharmony among young couples. The first census of U.S. was in 1790, that time the crude birth rate was 55 / 1000 total population; in 2007 it was 14.3 / 1000 total population. It has decreased about 75% over the past 200 plus years. It affects approximately 8 – 10 % of the couples world wide (Raikin Noel 2009).According to the American Society for Reproductive Medicine the prevalence of infertility is about 5.3 million among the Americans, or 9% of the reproductive age population. Obesity and lifestyle modifications have contributed a lot to this. Almost 7% of the couple every year, at the reproductive age, reported that they had not used any contraceptives for more than twelve months and yet not become pregnant. Overall long term decline in fertility rates is due to

- Late marriage and frequent divorce
- More use of contraception
- Delayed beginning of childbirth process
- Decreased family size

Age related infertility is far more likely in women. In olden days people hesitated to come and seek aid for infertility .The first reason for this being social stigma, and second was their ignorance. Also there was and also is still prevalent, a myth that it is a curse from God. Statistics have showed that in 1998 there were about 48 centers for assisted reproductive therapy in Western Europe. Currently it is increased to 116, which shows the increase in childlessness. Despite these advancements in science, the predisposing factors remain unclear at times (Alice .K.Jones 2008). In Canada, the Royal Commission on New Reproductive Technologies and provincial ministries of health have explicitly affirmed infertility as a legitimate medical concern

and infertility as legitimate medical care for public funding. In Africa rates are high as 20 – 30 % in some areas. In some Sub Saharan Africa almost one third of the couples are unable to conceive. This is called the infertility belt.

World Fertility Survey and others estimated rates of infertility in South Asia, such as 4% in Bangladesh, 6% in Nepal, 5% in Pakistan and 4% in Sri Lanka. One estimate of overall primary and secondary .infertility in South Asia, on the basis of women at the end of their reproductive lives in the age group 45-49 years, suggests an infertility rate of approximately 8% in India, 10% in Pakistan, 11% in Sri Lanka, 12% in Nepal and 15% in Bangladesh.

India is a country with a billion plus population, and every minute a child is born. It stands second next to China in population. But, statistics shows that childlessness is around 2.5% in India. A child is born a minute, but either to a same family or to a family where already there is extrapols. Even with population explosion now, on the long run there may be families who do not have offspring's, to carry their genes and names. And of course it is a social issue in our culture. Even the small family norms have stated "we two ours one "stressing at least one for a family **(K.Park 2009)**

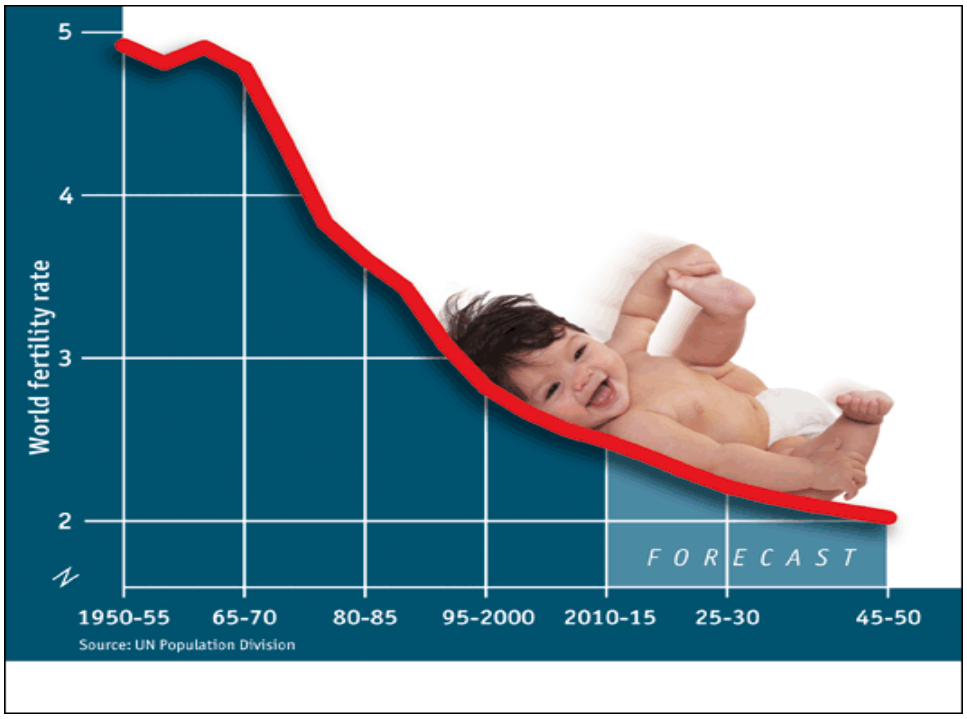
In Tamil Nadu according to statistics of 2008 approximately 3.58% of the estimated population has reported impaired fertility.

Infertility is not merely a health problem, it is also a matter of social injustice and inequality. Infertility also complicates marital dynamics, sometimes leading to marital instability, and occasionally divorce, polygamy or remarriage. Because motherhood is considered a mandatory status, infertile women may be harassed and tormented. Infertility, as well as being a medical condition, has a social dimension; it is a poorly-controlled, chronic stressor with severe long-lasting negative social and psychological consequences. It is true that some people never want to have children. However, for most people that want children, infertility is devastating. Part of this is a sociological problem. Society encourages couples to have children and looks down upon those that don't, calling them selfish. The suffering of infertility is a product

of a pronatal society, which values women largely for their ability to bear children.

Some of the pain of infertility and childlessness is due to the fact that family life is still very much the norm, even if single/career options are there In most industrialized as well as developing countries the prevalence of infertility is between 2 and 10 % of all women – because the woman is the measurement unit. There is no substantial evidence the women emphasize that they have experienced the problem, but there are no viable solutions at the time when they were young. So they remained childless, but have quite vague memories about trauma emotionally faced by them.

Fig -1: World Fertility rates forecasting



Source : Infertility Rates World wide-html.org

NEED FOR THE STUDY

Offspring are very important to all young couples. Their future depends on children. Family plays an important role in the experiences of the infertile couple. Economic consequences are a particular distressing factor. There is a need for psychological counseling in the treatment of infertile couples in which ever part of the world they reside. It should be realized that in developing countries, despite overpopulation, unwanted childlessness is an important social and economical burden that needs attention.

For women childbearing is associated with stabilizing their marriage and closer bonds with his family. Especially eldest daughters-in-law are eager to have their first child very soon, one year after marriage, to demonstrate their fertility. They feel pressured by their parents-in-law to give them a male grandchild who can carry on the family name. Thus for women childbearing is expected to bring happiness and family harmony

According to our Indian customs, it is normally the son who takes care of and/or supports their parents until they die. Often this role is handed over to their wives. Many married lives start in the husband's family until the couple is able to build their own house. However, after marriage, the wife's main duty is to care for her parents-in-law. Having no son can be a cause of old people's loneliness. Because of inadequate pension provisions retired people still have to earn their living, which means that children play a crucial role in supporting them, either financially or practically. For this, definitely a child is needed, and fertility stands essential here.

The experienced social sufferings of women due to childlessness are difficulties concerning integration into the family-in-law and their powerless status in the community without children.

In Chennai, at Egmore there exists, an Institute of Obstetrics and Gynaecology, Hospital for Women and Children. In this Hospital there is an infertility clinic. The yearly statistics of this infertility clinic attendance is about 2000-4500 clients. At the infertility clinic at the Institute of Obstetrics

and Gynaecology Hospital for Women and Children the outpatient strength per day is about 50 -60 cases. Among that about 8 – 10 cases are new cases. The annual census for the year 2008 was as high as 7520.The monthly statistics was about 246 for the month of March 2010 alone. Everyday about 5 – 8 women are posted for some diagnostic procedure related to infertility alone. There also women who attend the infertility clinic every alternative day, hoping to get a solution for their problem. Social isolation, marital conflicts and separation, disharmony within family are some of the problems associated with infertility.

Table-1.1: Statistics showing yearly patient census (new cases) at infertility clinic IOG.

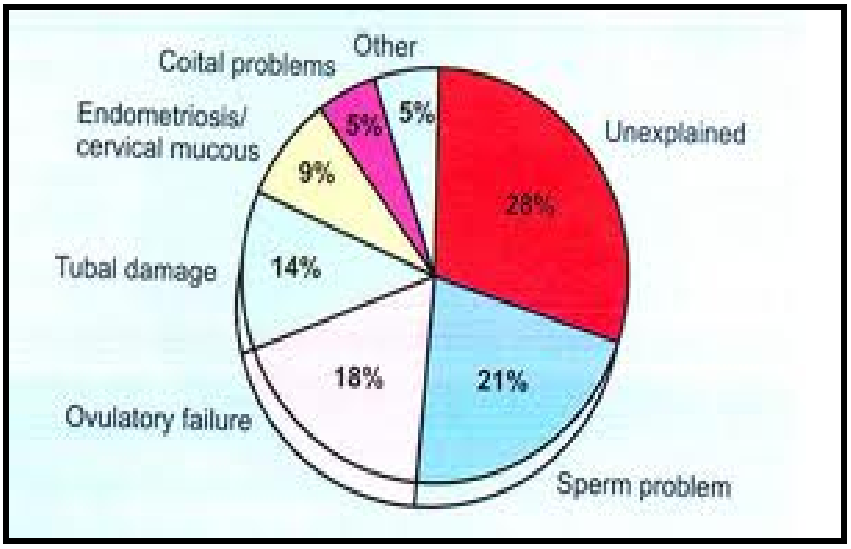
YEAR	2005	2006	2007	2008	2009	2010
NEW CASES	1090	780	798	834	889	923

Source: Medical records Department IOG, Chennai.

The above table depicts that there was initially a rise in the number of new cases, then a meager fall. And currently there is a steady rise in the rates.

There are about 43 assisted reproductive therapy centers in Chennai. For such a big population like Chennai, this infertility clinic is just a small portion. And also people seek other private Hospitals for treatment. The rise in the number of Infertility treatment centers clearly depicts the rise also in number of infertility clients.

Fig - 2: Distribution of causes of infertility



Source: WHO statement of causes for infertility

Most cases of female infertility are caused by problems with ovulation. Without ovulation, there are no eggs to be fertilized. Some signs that a woman is not ovulating normally include irregular or absent menstrual periods.

Ovulation problems are often caused by polycystic ovarian syndrome (PCOS). PCOS is a hormone imbalance problem which can interfere with normal ovulation. PCOS is the most common cause of female infertility. Primary ovarian insufficiency (POI) is another cause of ovulation problems. POI occurs when a woman's ovaries stop working normally before she is 40. POI is not the same as early menopause.

Less common causes of fertility problems in women include:

Blocked Fallopian tubes due to pelvic inflammatory disease, endometriosis, or surgery for an ectopic pregnancy

Physical problems with the uterus uterine fibroids, which are non-cancerous clumps of tissue and muscle on the walls of the uterus.

Many factors as obesity, long working hours, type of job, lifestyle practices stress etc contribute a lot to infertility. Women ultimately end up in stress with this infertility. On visualizing it, infertility is becoming more and more multidimensional in occurrences. Prevention, early detection and management can definitely reduce thus social stress.

Every problem has a solution or at least prevention. On her posting in this clinic, the investigator observed that most of the women, attending this clinic had severe stress. Early detection or at least prevention of its modifiable factors can contribute to some degree to the reduction of this stress. This created an impact within the investigator to probe through the reasons behind the occurrence of infertility. And, as an attempt to find the contributing factors to infertility this study was taken up.

STATEMENT OF THE PROBLEM

To identify the risk factors associated with infertility among women attending infertility clinic at Institute of Obstetrics and Gynaecology, and prepare a self instructional module on preventing the modifiable factors.

OBJECTIVES

1) To identify the risk factors contributing to infertility

2) To associate the risk factors with infertility

3) To associate the risk factors with selected demographic variables

4) To prepare a self instructional module on prevention of modifiable factors based on study findings.

RESEARCH HYPOTHESES

H1: There is a relationship between selected risk factors and infertility.

H2: There is a significant relationship between selected demographic variables and risk factors.

OPERATIONAL DEFINITION

Infertility: It refers to the childlessness of a couple even with unprotected sex, and not using other contraceptives for a period of more than two years.

Risk factors: It refers to the factors as irregular menstrual cycle, marital life duration, ovarian and tubular diseases, marital and familial conflicts ,life style factors as food habits other practices, sexual activity etc.

Women: It refers to the women who are diagnosed to have impaired fertility and attending infertility clinic for treatment.

DELIMITATION

1) The study is delimited to a period of 4 weeks

2) The study is delimited only to women attending infertility clinic at Institute of Obstetrics and Gynaecology, Chennai.

CHAPTER II
REVIEW OF LITERATURE

According to Nancy Burns (2005) a literature review is an organized written presentation of what has been published on a topic by scholars. Review of literature is an ongoing process and it covers the entire planning stage. A good research is always supported by its evidences and review of literature serves as a mean of support.

The literature relevant to the topic of the study was reviewed and a combination of its conclusions is given in this chapter. The most relevant and recent ones in this topic are stated in order to support this study further.

The review of literature for this study has been given as

- Literature related to prevalence of infertility
- Literature related to factors contributing to infertility
  - Obesity
  - Polycystic ovarian disease
  - Utero tubal factors
  - Lifestyle factors
  - Psychological factors
- Literature related to problems associated with infertility.

LITERATURE RELATED TO PREVALENCE OF INFERTILITY

Zhonghua (2011) conducted a cross sectional study to investigate the prevalence of infertility and its risk factors in the fertile-age couples of Beijing, China. They showed that a total of 97 couples were classified as infertile. And the total prevalence of infertility in 7 Beijing districts was 1.72%. The standardized prevalence of infertility was 2.1%. 57 (58.76%)

couples were classified as of primary infertility and 40 (41.24%) of secondary infertility. They proved that the risk factors of infertility were tuberculosis (TB), endometriosis (EM) and pelvic infection disease (PID).They concluded that the prevalence rate of infertility declines with age in women. Both EM and PID are the risk factors for infertility

Issa Y, 2010 conducted a prospective study with the aim of assessing couple fecundability in a population which to a large degree was unaffected by the same socio-cultural influences. The studies showed that overall fecund ability was 0.17. Educated women appeared to be highly fecund. It concluded that the fecund ability result is probably uninfluenced by the societal and cultural factors seen in Western populations, because premarital sex is a taboo in this Muslim population. The increase in fecund ability during the first months following marriage is difficult to interpret, but could be due to either behavioral or biological influences.

Safarinejad MR. (2008) conducted an exploratory study to explore the prevalence and risk factors of infertility in Iran. They reported that the overall prevalence of infertility was 8%. The weighted national estimate of primary infertility was 4.6% .There was a pronounced regional pattern in the levels of primary infertility. The prevalence of secondary infertility was 3.4% .They concluded that overall the prevalence of infertility falls within a relatively wide range being high in the Southern counties, and low in the Northern counties.

Ombelet W., 2008 Nov, conducted a descriptive study at Belgium to identify the distribution of infertile couples in and around western societies, and also to identify its related factors. The investigators reviewed many sources from Medline, Pub Med, Excerpta Medica and EMBASE for relevant papers published between 1978 and 2007. Those reviews provided a comprehensive survey of all important papers on the issue of infertility in developing countries.It was reported that the exact prevalence of infertility in developing countries was unknown due to a lack of registration and well-performed studies. They finally concluded their study with a finding that

worldwide more than 70 million couples suffer from infertility, the majority being residents of developing countries.

Kumar D (2007)., conducted a descriptive survey at Jabalpur M P with an aim of investigating prevalence of infertility among Khairwar and non-Khairwar tribes. The study was carried out in the Kusmi block of the Sidhi district of Madhya Pradesh in Central India. The population were about 1306 people 133 eligible couples belonged to the Khairwar tribe; and 99 eligible couples belonged to non-Khairwar tribes. The results were such that the prevalence of infertility 53 %. In the Khairwars, infertility was found in 23 (17.2%) significantly higher than in non-Khairwars--10 (10%).

Benagiano G et al, (2006 Dec) Conducted a study in Roma, Italy. With an aim of surveying the prevalence of infertility among couples in European continent. His study estimated that in Europe the prevalence of infertility was around 14%. He concluded that there are important regional differences in the incidence and causes of sterility. It was also suggested that some of the known factors in western countries are increase in the age in which women attempt to conceive, and sexually transmitted infections.

Inhorn MC. 2003 May; USA Conducted a study to examine the infertility rates within Egypt and major forces fueling global demand for assisted reproductive therapies. From his study it was noted that infertility is a problem of global proportions, affecting on average 8-12 percent of couples worldwide. They identified that in countries like Egypt, infertility rates were considerably high such that there were almost 40 Invitro fertilization centers. This study suggested that the need for primary prevention of infections leading to infertility should be stressed, thereby reducing global rates of infertility.

LITERATURE RELATED TO RISK FACTORS

Oger P, et.al (2010 Dec) conducted a study **Informations for the infertile couple.** They reported that The aim of the first consultation related to infertility is supposed to be the optimization of all factors that can increase the chances of pregnancy: more frequent sexual intercourse during the

fertility windows; lifestyle modifications (better diet, decreased exposure to tobacco or other toxics); older couples can enjoy the same advice but should be proposed a quicker medical support. Maternal preconceptional advice must be transmitted. A testicular cancer must always be excluded in infertile men, while the risk of hormone-dependent cancers in infertile women remains undetermined. With the results of the first consultation, couples will generally be proposed the best solution to achieve their parental project: ovarian stimulation assisted reproductive technology (IUI, IVF or ICSI) or adoption.

Romero Ramos R, 2008 conducted a case control study to identify the risk factors with significant association with female infertility. Twenty socio demographic and clinical risk factors for female infertility were analyzed. Their results proved that there were 6 factors with statistical significance: advanced age, elevated body mass index, age of onset of sexual activity, prior pelvic surgeries, and presence of stress .It was hence concluded that there are clinical and demographic risk factors associated with female infertility. Identifying them in women at reproductive age can greatly reduce this infertility's occurrence.

Sundby J. (2007); conducted a study Methodological considerations in the study of frequency, risk factors and outcome of reduced fertility. It was proved that there are many factors that may cause increasing infertility. In most western societies, the birth of the first child is delayed, and during this time there is increased risk of acquiring diseases of the reproductive tract. Long term use of contraceptives including IUD's and even induced abortion may have an effect. Increased use of tobacco and alcoholic beverages can add to the risk of infertility. The increase of fitness programs, strenuous activity, and extreme weight control are related to menstrual disorders and can cause infertility. There is a 50-60% chance for success in hormonal infertility treatment for ovulatory disorders, 20-30% after tubal surgery, and less than 20% after 1 in-vitro fertilization.

a. Obesity

Mutsaerts MA et.al (2010 Jun) conducted a multicentered randomized controlled trial to assess the cost and effects of a six-months structured lifestyle program aiming at weight reduction followed by conventional fertility care (intervention group) as compared to conventional fertility care only (control group) in overweight and obese sub fertile women. The outcome measure was a healthy singleton born after at least 37 weeks of gestation .It was proved that in the intervention group there was a significant increase in the outcome measure. They concluded that weight reduction aided in better pregnancy outcome, and also was a major factor influencing infertility.

Sathya A, et.al (2010 Sep) conducted a retrospective study in Chennai to assess the effect of women's body mass index (BMI) on the reproductive outcome, their gonadotrophin levels (day 2 LH, FSH), gonadotrophin dose required for ovarian stimulation, endometrial thickness and oocyte/embryo quality. Medical records of 308 women attending infertility clinic were reviewed. They were classified into, normal weight (BMI<25 kg/m(2)), overweight (BMI>25 <30 kg/m(2)) and obese (BMI>30 kg/m(2). The results were that obesity is known to cause an ovulation, sub fecundity; increased risk of fetal anomalies and miscarriage .They concluded that preconceptual counseling for obese women is a must as weight reduction helps in reducing pregnancy-related complications.

Koning AM et al (2010 May) conducted a hypothetical cohort study in Netherlands .The aim was to study the consequences of overweight and obesity with respect to fecundity, costs of fertility treatment and pregnancy outcome in subfertile women. They reported that compared with women with normal weight, live birth was decreased by 14 and 15% in overweight and obese anovulatory women, respectively, for ovulatorys women it was decreased by 22 and 24% respectively. They thus concluded that overweight and obese subfertile women have a reduced probability of successful fertility and their pregnancies are associated with more complications and higher costs.

Nelson SM & Fleming R (2007 Aug); conducted a cohort study to examine the impact of obesity and potential intervention upon human reproduction in the domain of fertility, fertility treatment, pregnancy and its complications. It was reported that Specific risks through pregnancy were real and may be addressed by lifestyle modification leading to weight loss Obese women undergoing fertility treatment should be advised of the increased and absolute increased risks they are undertaking, and fertility centres should adopt appropriate strategies.

Nelson SM, & Fleming RF. (2007 Apr); conducted a quasi experimental study to analyze the preconceptual contraception paradigm: obesity and infertility with a structured education program.. It was stated that obesity independent of polycystic ovary syndrome (PCOS) is associated with anovulation, and minimal weight loss alone is an effective therapy for induction of ovulation in both obese women and obese PCOS women. They suggested that lifestyle programmes encouraging weight loss should be considered to be an ovulation induction therapy and due consideration for a potential pregnancy in an obese woman given. It was proposed that women with a BMI in excess of 35 kg m (2) should lose weight prior to conception-not prior to receiving infertility treatment. Therefore, clinicians undertaking the management of infertility in obese women should adopt measures to reduce their body mass prior to exposing them to the risks of pregnancy.

Metwally M, et al (2007 Nov) conducted a study to identify the impact of obesity on various aspects female reproductive function. It was reported that the more and more women become obese, the reproductive problems associated with obesity present an ever-growing challenge to physicians involved in their fertility care. They finally concluded that obesity was one of the major contributing factors for infertility and should be made aware to young adolescent girls .

Kuchenbecker WK, et al (2006 Nov) conducted a study with an aim of analyzing the relation between subfertility and overweight women. Their report suggested that in addition to the long-term health risks of being

overweight, overweight women of reproductive age were more commonly faced with reproductive disorders. Women who are overweight are less fertile than women of normal weight. The chances of both spontaneous conception and conception after ovulation induction and assisted reproduction are lower in women who are overweight. The chance of a live birth is also decreased due to an increased risk of miscarriage. Furthermore pregnancy outcome is compromised by obesity-related complications of pregnancy. They concluded that Weight loss of 5-15% in subfertile women who are overweight increases the chance of spontaneous conception and conception after fertility treatment and can be achieved through a low-calorie diet, increased exercise and behavior modification.

b.Polycystic ovarian diseases

Kinsoler et al (2009) conducted a cohort study among infertile women in reproductive age group at Tanzania. The main objective was to identify the relationship between PCOD and infertility. Among the identified women with impaired fertility majority were diagnosed to have PCOD associated with it. They concluded that Women with Polycystic ovarian disease are at a risk for infertility

Hull MG.(2010) conducted a comparative study to determine the frequency of polycystic ovarian disease (PCOD) as a cause of oligo-amenorrhea and infertility. The results show that by contrast with the groups having hyperprolactinemia or hypothalamic disorder the group with hirsutism (and therefore presumed PCOD) was closely resembled by a non-hirsute group in terms of estrogenization, LH level, LH/FSH ratio, prolactin level, body mass and responsiveness to clomiphene. The last group was therefore concluded to have a mild occult form of PCOD. The annual incidence of infertility due to PCOD per million was 41 with overt PCOD and 139 with occult PCOD (total 180). Of those, 140 appeared to respond well to clomiphene (78%) but 40 (22%) failed, requiring alternative therapy.

Ryed Anne et al (2008) studied the contribution of polycystic ovarian disease towards infertility. Early diagnosis of PCOD will greatly aid in

detection of infertility. She identified that PCOD was one of the major predisposing factors for infertility. Programs and early adolescent clinics will identify clients with PCOD early. This will help to plan for early treatment. She concluded that PCOD is directly related to infertility.

Al-Azemi M, et al (2004 Dec) conducted a study to identify effect of obesity on the outcome of infertility management in women with polycystic ovary syndrome. The aim was to investigate the incidence of obesity among patients with polycystic ovarian syndrome attending infertility clinic and the effect on treatment outcome. Two hundred and seventy women with polycystic ovarian syndrome attending the infertility clinic were evaluated clinically, biochemically, and laparoscopically. They were stratified according to their body mass index (BMI) as follows: normal weight: 18-24; overweight: 25-29, obese: 30-34, and grossly obese: > or = 35. Therapy included induction of ovulation with clomiphene citrate and gonadotrophins. The patients were followed up through during induction of ovulation and pregnancy

De Ziegler D, et al (2010 Aug) conducted a study Endometriosis and infertility: pathophysiology and management. They stated that Endometriosis and infertility are associated clinically. Medical and surgical treatments for endometriosis have different effects on a woman's chances of conception, either spontaneously or via assisted reproductive technologies (ART).They also stated that the presence of patent fallopian tubes, normal ovulation, and normal sperm parameters may still be associated with subfertility because of distortion of the uterine cavity or the presence of intraperitoneal endometriosis.

c. Utero- tubal factors

Muzii L, et al (2010 Jan-Feb) studied the tubo-peritoneal factor of infertility,diagnosis and treatment. They reported that the commonest cause of tubal damage is pelvic inflammatory disease (PID), which in the major cause is Chlamydia trachomatis infection. Other causes of tubal damage include postsurgical adhesions or endometriosis. They concluded that tubal

reconstructive surgery remains an important option for many couples and surgery should be the first line approach for a correct diagnosis and treatment of tubal infertility.

Pritts EA, et al (2009 Apr) conducted a study on fibroids and infertility. The main objective was to investigate the effect of fibroids on fertility. They proved that Fertility outcomes were decreased in women with submucosal fibroids, and removal seems to confer benefit. Subserosal fibroids do not affect fertility outcomes. Intramural fibroids appear to decrease fertility, but the results of therapy are unclear. More high-quality studies need to be directed toward the value of myomectomy for intramural fibroids, focusing on issues such as size, number, and proximity to the endometrium.

Khaund A,& Lumsden MA (2008 Aug) Conducted a study Impact of fibroids on reproductive function. They stated that it is possible that fibroids are responsible for 2-3% of cases of infertility. The mechanisms by which these benign tumours could cause impaired reproductive function, both in terms of difficulty conceiving and early pregnancy loss, remain unclear. They also reported that miscarriage rates in women with fibroids and those who have undergone myomectomy vary considerably. It appears that miscarriage rates fall after myomectomy, although the overall rates of pregnancy loss remain higher than those seen in the general population.

d. Lifestyle factors

Buck GM, et al (2006 Jul) conducted a retrospective study to identify the life-style factors and female infertility. They identified relevant papers through MEDLINE, Index Medicus, and a manual review of reference lists. Risk factors that affect the risk of primary tubal infertility and that were corroborated in two or more studies included use of intrauterine devices (especially the Dalkon Shield) and cigarette smoking. They also identified extremes in body size as a risk factor for primary ovulatory infertility. Cocaine, marijuana and alcohol use, exercise, caffeine consumption, and ever-use of thyroid medications were possible risk factors for various subtypes of primary infertility. Few risk factors have been assessed or identified for

secondary infertility or other less common subtypes, such as cervical or endometriosis-related infertility.

Kelly-Weeder S & Cox CL. (2006) studied the impact of lifestyle risk factors on female infertility. The objectives of the study were to identify lifestyle factors associated with infertility in women by comparing a sample of infertile women with a group of fertile women .It was suggested that some factors directly related to infertility included increasing age, a history of an ectopic pregnancy, current smoking, obesity, and self reported health status.

Kelly-Weeder S & O'Connor A (2006 Jun) conducted a cohort study on the modifiable risk factors for impaired fertility in women. The objective was to provide an overview of impaired fertility in childbearing-aged women, to review the current research on modifiable lifestyle risk factors implicated in its development, and to suggest strategies for nurse practitioners (NPs) to assist women in behavioral changes that will allow them to protect their fertility. They declared that research shows that advancing age, a history of a sexually transmitted infection and/or pelvic inflammatory disease, extremes of body weight, and tobacco and caffeine use are potentially modifiable risk factors in the development of impaired fertility. They also suggested that nurse practioner must be aware of the link between these behaviors and the development of impaired fertility in order to assist women in preserving their fertility. Individual counseling, education, and community-wide education strategies are discussed.

Greenlee AR, et al (2003 Jul) conducted a retrospective study to analyze the risk factors for female infertility in an agricultural region. The study examined agricultural and residential exposures and the risk of female infertility. Cases and controls (N = 322 each) came from women who sought treatment at a large group medical clinic in Wisconsin. Women and their male partners provided information on health, occupational and lifestyle exposures in response to a telephone interview. It was also identified regarding behavioral risk factors including alcohol consumption smoking, passive smoke exposure, steady weight gain in adult life, and having a male partner over the age of 40. Drinking 3 or more glasses of milk per day was protective

of female fertility. The results suggested that certain agricultural, residential and lifestyle choices may modify the risk of female infertility.

d. Psychological factors

Wilson Jones et al (2008) conducted a study on stress and infertility. They stated that stress and infertility are directly related. Stress causes infertility and inturn, infertility ends in stress. They have stated that stress disturbs the hypothalamus pituitary ovarian axis and contributes towards infertility indirectly. They concluded that psychological in any forms predisposes to infertility.

Hunt N, McHale S (2005) explains that Psychosocial issues are often about the perceptions that men and women have regarding androgenic disorders rather than the disorder itself. Psychological problems include anxiety, depression, and social phobias. In more serious cases, psychological problems can affect masculinity, selfhood, and identity. Clinical psychologists and other psychotherapists can offer some assistance regarding these perceptions, but where there are problems relating to personality and coping styles, these may be more difficult to overcome.

Andrews FM (2005) conducted a study to identify the association between stress and infertility. They suggest that fertility problem stress has direct effects that increase marital conflict and decrease sexual self-esteem, satisfaction with own sexual performance, and frequency of sexual intercourse. They also concluded that the life quality of couples with fertility problems could be improved if health care providers and couples themselves take steps to reduce such stresses and reduce their impact on the marriage factors.

LITERATURE RELATED TO PSYCHOLOGICAL PROBLEMS OF INFERTILITY

Kraaij V, et al (2010) conducted a cross sectional and retrospective study to analyze the relationships between cognitive coping strategies, goal adjustment, and symptoms of depression and anxiety were studied in people

with fertility problems. The results showed that positive refocusing, rumination and catastrophizing, and goal reengagement were related to symptoms of depression and anxiety. They also added that, rumination and catastrophizing were also related to emotional problems nine months later. The findings suggest that intervention programs should focus on cognitive coping strategies and goal-based processes.

CONCEPTUAL FRAMEWORK OF THE STUDY

A conceptual framework is analogous to the frame work of the house. It is a frame work of reference bases for observation, of concepts, research design, generalizations. It offers framework of preposition for conducting research these concept are linked together to express the relationship between them. A model is used to donate symbolic representation at the concept.

Conceptual framework provides the prospective from which the investigator views the problem, and an integration of existing theoretical traditions and knowledge about the topic.

The conceptual framework used for my study is ***Rosenstoch (1966),*** Health Belief Model.

The health belief model was a psychological model developed in the 1950s, for studying and promoting the uptake of services offered by social psychologists.

Health belief model (HBM) was one of the first models that adopted theory from the behavioral sciences to health problems and it remains one of the most widely recognized conceptual framework,

Rosenstoch address the relationship between the person's belief and behaviors. It is a way of understanding and predicting how clients will behave in relation to their health and how the clients will behave in relation to their health and how they will comply with health care therapies. Use of the model is based on a persons perceptions of susceptibility to an illness and the seriousness of the illness.

Rosenstoch, in the year 1966 constructed the original health belief model. This health belief model is concerned with what people perceive, or believe, to be true about themselves in relation to their health.

According to Rosenstoch, health belief model was based on four constructs.

- ***Perceived susceptibility-*** an individual's assessment of their risk of getting the condition.

- ***Perceived severity-*** an individual's assessment of the seriousness of the condition and its potential consequences.

- ***Perceived barriers-*** an individual's assessment of the influences that facilitate or discouraged adoption of the promoted behavior.

- ***Perceived benefits-*** an individual's assessment of the positive consequences of adopting the behavior.

Two constructs were later added,

- ***Perceived efficacy-*** an individual's self assessment of ability to successfully adopt the desired behaviour.

- ***Cues to action-*** external influences promoting the desired behaviour.

MODIFIED ROSENSTOCH'S HEALTH BELIEF MODEL:

Clients Perception

In this study the clients had, to a certain extent, perception regarding fertility. They also had certain perceived ideas regarding the external and internal factors influencing an individual's fertility. They were commonly thought of as factors leading to infertility by clients. The clients also perceived certain consequences of infertility socially.

Modifying Factors

The investigators study has identified certain factors which can be considered as modifiable factors contributing towards infertility. On modifying these factors, infertility occurrence can be prevented to some extent. Some common factors are Obesity, sexual practices, lifestyle practices, conflicts leading to stress, exercises. Also ,early identification of certain factors as irregular menstrual periods, Polycystic Ovarian Disease, increased TSH, and prolactin levels, can aid in early identification and management of infertility related causes.

Likelihood of taking action

In this study, likelihood actions were the actions taken by the clients as a means of solution to their problem. At times they also served as measures to identify and manage their infertility. The most common likely hood actions were early diagnosis and treatment for infertility.

Cues to action

These were the external ways by which the women gets to know the reason behind infertility, its management and prevention. In this study the self instructional module which was prepared based on study findings was also one of the cues.

Perceived Efficacy

The woman will be able to identify the modifiable factors which can be prevented or detected earlier and also gets to know the likelihood actions that can be taken such that infertility problem may get its solution comparatively earlier.

Perceived benefits

The women can prevent or modify the identified factors, hence can promote fertility of self and also guide others with the same problem.

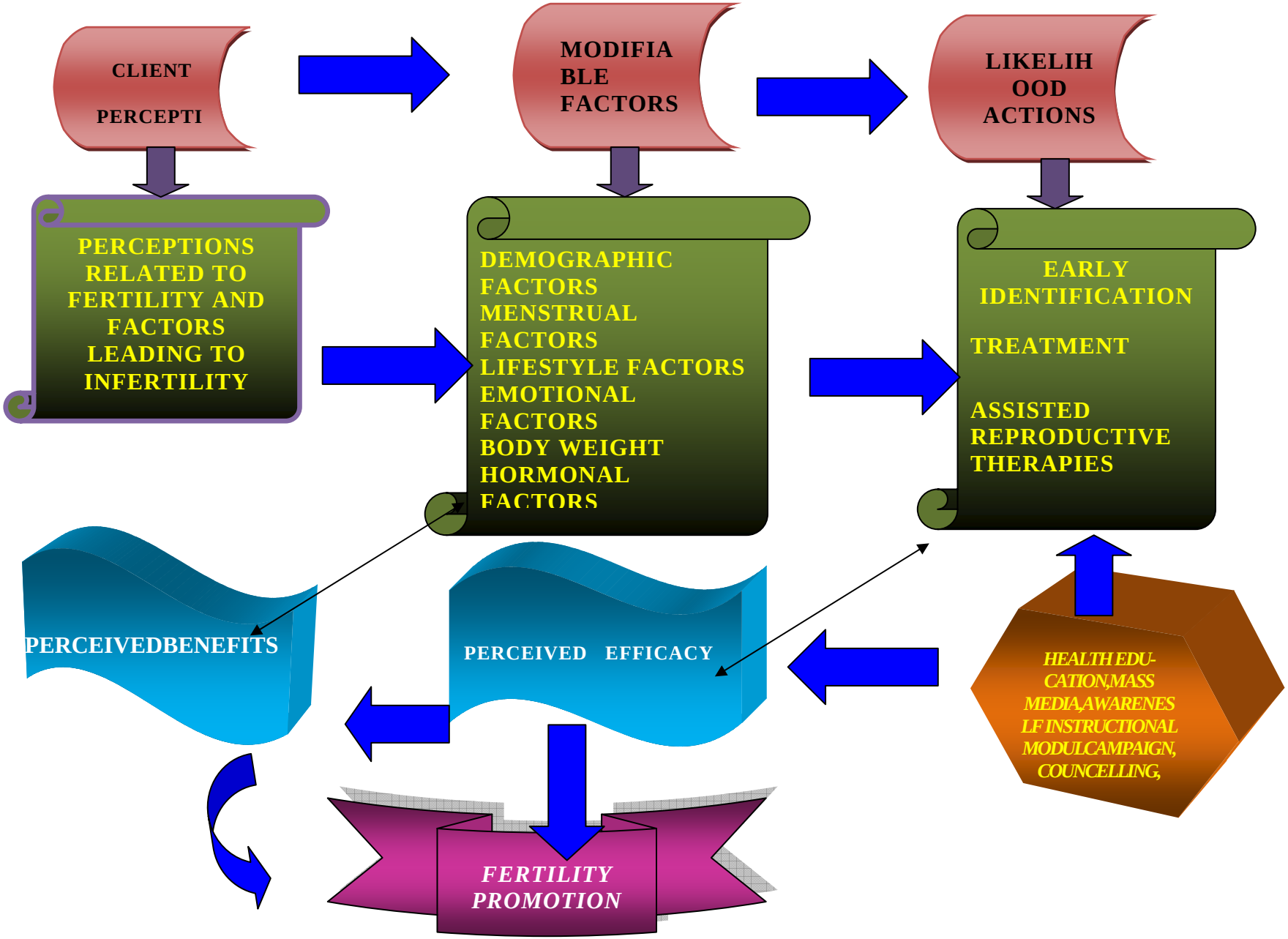


Fig 3: MODIFIED ROSENSTACH'S HEALTHBELIEF MODEL1966

CHAPTER-III
METHODOLOGY

Research methodology involves a systematic and sequential procedure by which the investigator starts the plan from the time of initial identification of the problem to its final conclusion. Methodology is one of the most vital aspect of a research study.

This chapter deals with a brief description of each step adopted by the investigator for the study.

3.1. RESEARCH APPROACH AND DESIGN

Quantitative approach and Descriptive design.

3.2. STUDY SETTING

The study was conducted in the infertility clinic at the Institute of Obstetrics and Gynaecology, Hospital for Women and Children, Chennai. This is the largest and oldest Maternity institution in Asia. It is a tertiary care center, and gets most of its patients usually as referrals from other Government maternity centers. It is a center with well equipped facilities and skilled staff to manage all emergency situations. Being a 770 bedded Hospital, it has about 120 beds exclusively for Gynaecological conditions. There also exists an infertility clinic which functions everyday from 8am to 12 noon. The hospital does not serve with a special ward for infertility, but mothers undergoing procedures related to reproductive therapy are admitted in the gynaecological ward. The census of the Out patient department for infertility clinic per day ranges from about 100 – 140 women.

3.3. POPULATION

Women attending infertility clinic at Institute of Obstetrics and Gynaecology, Hospital for Women and Children, Chennai.

3.4. SAMPLE SIZE

Hundred women attending the infertility clinic were selected as the samples for the study.

3.5. SAMPLING TECHNIQUE

The sampling technique used for the study was Systematic Random Sampling.

Per day about 30 – 40 women are in minimum attending the infertility clinic, so on an average for 26 working days there will be approximately 780 – 1000 women. Usually the women attend the infertility clinic once a month and rarely a second time incase of any diagnostic procedure or evaluation of the same. As decided the sample size was 100,per day the number of samples selected was 5.According to the above mentioned systematic random sampling technique K = n / s ,where K is the samples, n is the available population and s is the size. Thus 30 / 5 = 6.Hence every 6th client from the infertility clinic register was selected.

3.6. CRITERIA FOR SAMPLE SELECTION:

Inclusion criteria

1) Women with primary infertility

2) Women who are willing to participate

3) Women ho speak and understand Tamil.

Exclusion criteria

1) Women with secondary infertility

2) Women with associated co morbid illness

3) Women whose husbands have abnormal semen studies.

3.7. TOOL

Development of the tool: The tool used for this study was structured interview schedule and document schedule. After an extensive review of literature of primary and secondary sources, the investigator constructed the tool. The main sources were from journal articles related to research, books related to infertility, and e- journals. Structured interview was adopted because, more relevant information was need for the study, and also, while collecting the information the investigator observed the pain in their talk. Document schedule was used to note down all results of diagnostic investigations and also other physical parameters.

DESCRIPTION OF THE TOOL

The tool used for the study was Structured Interveiw Schedule and Document Schedule

Section A: Interview Schedule

- ***Part I :***It consist of the Demographic variables including age, education ,occupation, religion, breadwinner ,family type, income and place of residence
- ***Part II:*** It consisted of Gynaecological factors which include menstrual history, and marital history
- ***Part III:*** It consist of Psychological factors including marital conflicts, familial conflict.
- ***Part IV :*** It consist of Lifestyle factors as diet , exercise, habits and sexual activity

Section B: Documentation Schedule

- ***Part I :*** Physical measures as height, weight, body mass index
- ***Part II***: Diagnosed cause of infertility and Hormonal values.

B. TESTING OF THE TOOL

3.8CONTENT VALIDITY

After construction of the questionnaire for identifying the risk factors associated with infertility, it was tested for its validity and reliability. Content validity was obtained from two experts from Medical and two experts from Nursing in the field of Obstetrics and Gynaecology. They had suggested certain modifications, after which was done, the instrument was approved for its usage.

3.9RELIABILITY:

Reliability of the tool was assessed by using Test retest method. After pilot study it was assessed using Test retest method. Correlation coefficient was calculated using Test retest method. Calculated r value is 0.82. This correlation coefficients is very high and it is excellent tool for assessing risk factors for infertility

3.10 PILOT STUDY

The pilot study was conducted to assess the validity and usage of the tool, also to identify areas which need modifications and appraisal in the main study. It was conducted at the infertility clinic at Institute of Obstetrics and Gynaecology Hospital for Women and Children for a period of 3 days from 19th August 2010 to 21st August 2010. The chief informed earlier. The staffs also were intimated regarding this. For study 10 women were chosen with their willingness. The time for the interview was within the investigators planned time limits. Respondents hesitated to answer some questions and also gave ambiguous answers to some. Thus those areas were, with the suggestions of the research guide, modified for the main study. The samples who participated in the pilot study were excluded in the main study.

3.11DATA COLLECTION PROCEDURE

The data collection was for a period of 4 weeks from 16th of December 2010 to 16th of January 2011.Respondents were selected from the infertility clinic register after their consultation with the Obstetrician. Each respondent

were first enquired for their willingness. A brief introduction was first given about self and purpose of the study by the investigator. Written consent was then obtained from the respondents according to their willingness to participate. Confidentiality maintenance was assured to the women regarding all the collected information. The respondents were taken to a place with less disturbances where the actual face to face interview commenced .It was conducted using structured interview schedule. Each respondent were interviewed for about 15 – 20 minutes and after interview their records which included the Ultrasonographic reports and Hormonal assay reports were reviewed as a part of document schedule. The data collection started at 8 am and lasted till 1pm on all weekdays.

ETHICAL CONSIDERATION

The investigator followed all the ethical guidelines which were issued by the Institutional Research Ethical Committee. After a thorough review of the study topic and its inclusions the Ethical committee at Madras Medical College approved the study for its further proceedings. Permission was obtained from Director, Institute of Obstetrics and Gynaecology, Hospital for Women and Children, and the unit chief for pilot study and also for the main study.

3.13 DATA ANALYSIS AND INTERPRETATION

Descriptive statistical measures like mean, standard deviation was used to analyze demographic variables and inferential statistical methods like Karl Pearson's coefficient was used to analyze the correlation between factors. Also Chi square test was used to identify the association between factors and selected variables.

CHAPTER IV
DATA ANALYSIS AND INTERPRETATION

This chapter deals about the analysis and interpretation of the data collected. Analysis is a method for rendering quantitative, meaningful and providing intelligible information. So that research problem can be studied and tested including the relationship between the variables.

The data collected had been analyzed using appropriate statistical methods and the results are presented below:

ORGANIZATION OF THE DATA

Section I: Demographic Variable Of The Data

Section II: Gynaecological factors associated with infertility

Section III: Psychological and Lifestyle factors

Section IV: Physical and Hormonal factors

Section V: Association between selected factors and infertility

Section VI: Association between selected factors and selected demographic variables

Table 2: Distribution of women with infertility according to baseline data

DEMOGRAPHIC DATA		NUMBERS	PERCENTAGE
AGE	< =20	12	12%
	21 – 30	76	76%
	31 -40	12	12%
EDUCATION	Primary	85	85%
	secondary	15	15%
OCCUPATION	Home maker	89	89%
	clerical	11	11%
TYPE OF FAMILY	Joint	23	23%
	nuclear	77	77%
MONTHLY INCOME	<Rs.1000	21	21%
	Rs.1001-3000	79	79%
BREADWINNER	Husband	93	93%
	both	7	7%
RELIGION	Hindu	77	77%
	Christian	15	15%
	Muslim	8	8%
PLACE OF RESIDENCE	Urban	59	59%
	Urban slum	19	19%
	Suburban	7	7%
	Rural	15	15%

The above table depicts that the a higher proportion of women with infertility (76 %) were within the age group of 21 – 30 years of age, more than half (85 %) of them had a primary education ,and majority (89%) of them were home makers.

Table-3: Distribution of women with infertility according to menstrual history

MENSTRUAL DATA		NUMBERS	PERCENTAGE
Age at Menarche	10 – 12yrs	12	12%
	13 – 15 yrs	80	80%
	>16yrs	8	8%
Menstrual cycle	0nce in 28 days	7	7%
	Once in 28 – 32 days	19	19%
	Once in 33 – 45 days	22	22%
	Once in > 45 days	52	52%
Menstrual flow days	< 2 Days	8	8%
	2 – 3 days	34	34%
	4 – 5 days	48	48%
	6 – 7 days	10	10%
Premenstrual symptoms	Always present	66	66%
	Rarely present	26	26%
	Not present	8	8%
Dysmennorhea	Always present	60	60%
	Rarely present	24	24%
	Not present	16	16%

The above table reveals that more than half of the women with infertility (80%)had attained menarche at the age of between 13 – 15 years, majority (52%)of them have a menstrual cycle of once in more than 45 days, and also that a higher proportion (60%) of them had dysmenorrheal associated with menstruation always

Table-4: Distribution of women with infertility according to marital history

		n	%
Age at marriage	<=20 yrs	I8	18%
	21 – 25 yrs	70	70%
	26 -30 yrs	12	12%
Type of marriage	Non Consanguineous	86	86%
	Consanguineous	14	14%
Years of Marital life	1-2 yrs	7	7%
	3– 5 yrs	61	61%
	6– 8 yrs	22	22%
	>8 yrs	10	10%

The above table reveals that more than half of the women with infertility (70%)had been married at the ages between 21 – 25 years, majority of them (86%) had a non consanguineous marriage also that a higher proportion (61%) of them have a marital life for about 3 – 5 years.

Table-5: Distribution of women with infertility according to conflicts

Marital conflicts		***n***	***%***
Experience of marital conflict	Yes	70	70.0%
	No	30	30.0%
Experience of family conflict	Yes	63	63.0%
	No	37	37.0%
Care of spouse	Yes	89	89.0%
	No	11	11.0%
Experience of job /social stress	No	100	100.0%

The above table shows that majority of them experience marital conflicts (70%) ,and also experience familial conflicts (63%),also a higher proportion (62%) have reported that their spouse cares for them only at times.

Table 6: Distribution of women with infertility according to lifestyle practices

Lifestyle Practices		n	%
Type of food	Vegetarian	8	8.0%
	Non Vegetarian	92	92.0%
Frequency of meals	Regularly 3 meals	22	22.0%
	Regularly 2 meals	63	63.0%
	Irregular meal timing	15	15.0%
Type of exercise	Household works	100	100.0%
Frequency of sexual intercourse	Once a week	68	68.0%
	Twice a week	15	15.0%
	Occasionally	17	17.0%

The above table depicts that a higher proportion of women (93%)are non vegetarians, more than half them(63%) have a meal pattern of 2 meals, and almost all of them practice only household activities rather than exercises. It also shows that majority (68%) of them have a sexual activity once in a week.

Table 7: Document Schedule

		n	*%*
Body mass index	Underweight	8	8.0%
	Normal weight	32	32.0%
	Overweight	45	45.0%
	Obesity	15	15.0%
Diagnosed cause of infertility	Polycystic ovarian disease	56	56.0%
	ovarian cysts/ tumours	6	6.0%
	Tubal blocks	20	20.0%
	Hormonal imbalances	12	12.0%
	Unexplained	6	6.0%
Hormonal imbalance	TSH	4	4.0%
	Prolactin	8	8.0%
	Nil	88	88%

The above table interprets that majority(45%) of the women are overweight, and the diagnosed cause of most of them (56%) was Polycystic ovarian disease. Also among the women with hormonal imbalance most of them (8%) had an increased level of serum prolactin levels.

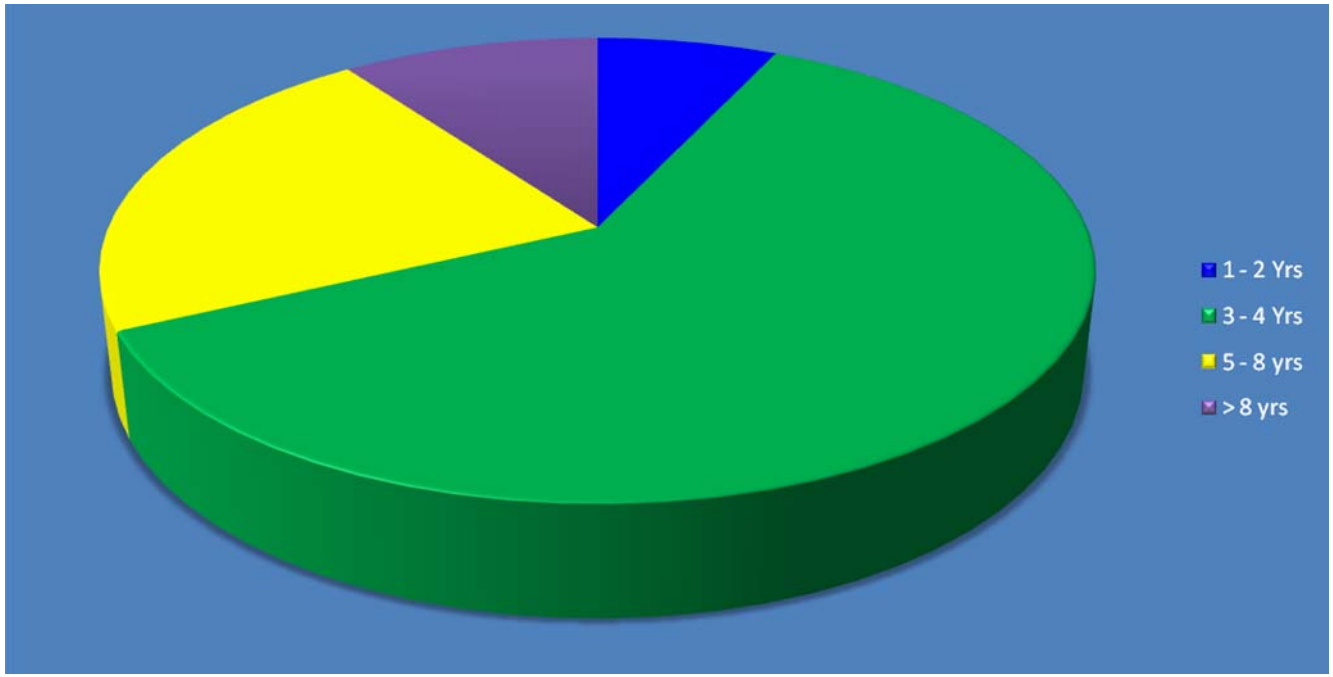
Table 8

Association between menstrual cycle and demographic variable

		MENSTRUAL CYCLE							Pearson chisquare test
		Once in 28 days		Once in 29 -32 days		Irregular menstrual cycle.			
		n	%	n	%	n	%		
Type of family	Joint family	7	30.4%	4	17.4%	12	52.2%	23	χ^2=25.39 P=0.001***
	Nuclear family	0	0%	15	19.5%	62	80.2%	77	DF=2 significant

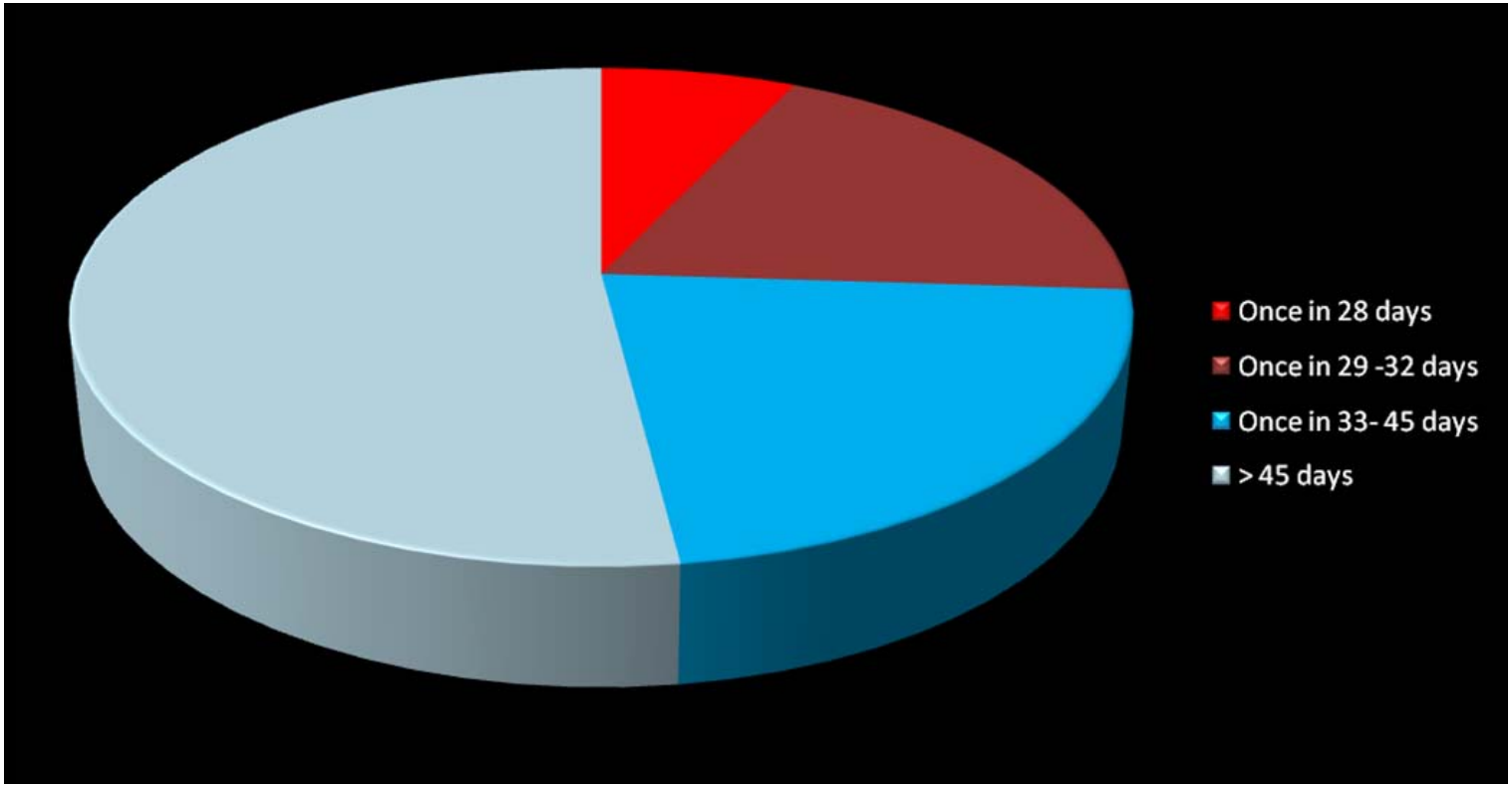
The above table depicts that the type of family is significantly associated with irregular menstrual cycle .Women in nuclear family have more irregular menstrual cycle as which are at a risk for infertility.

FIG-4: DISTRIBUTION OF WOMEN WITH INFERTILITY ACCORDING TO MARITAL LIFE DURATION



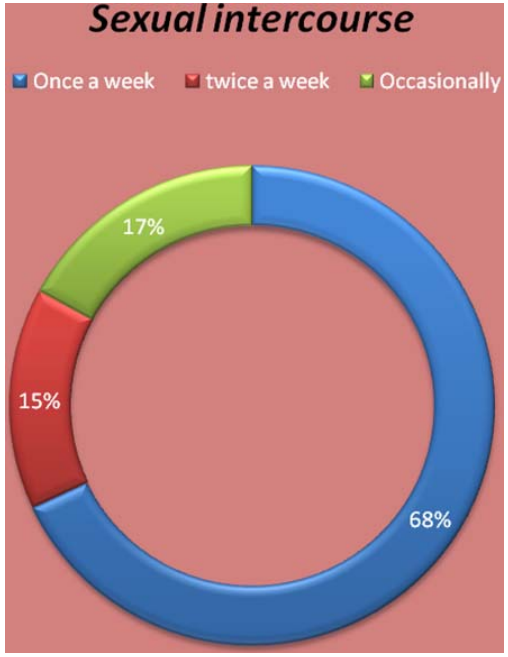
The above figure reveals that more than half of the women with infertility (61%)had a marital life for about 3 – 5 years, and some (22%) had a duration of 6 – 8 years. Most of the women in their early marital ages come for diagnosis and treatment of infertility.

FIG-5: ASSOCIATION BETWEEN IRREGULAR MENSTRYAL CYCLE AND INFERTILITY



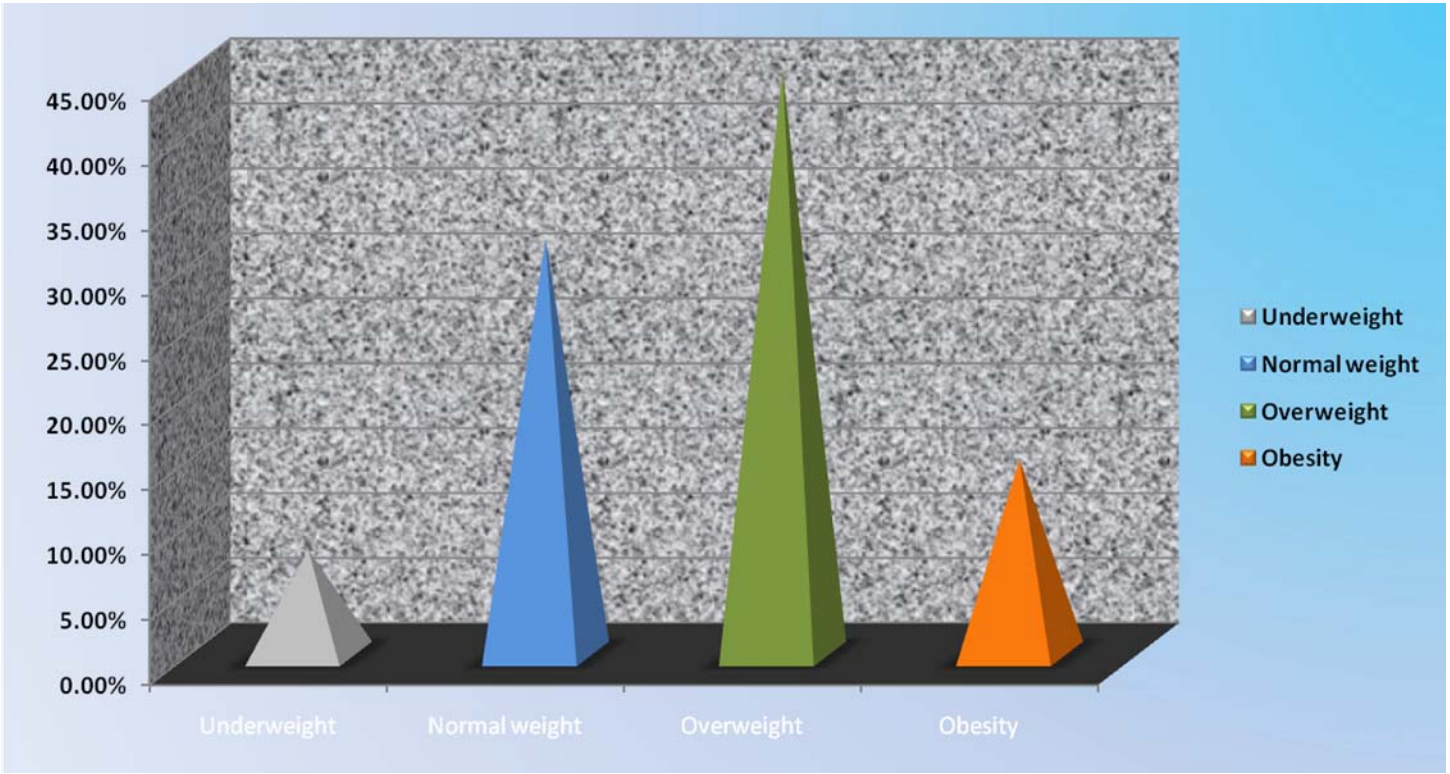
The above diagram interprets that there is a significant association between irregular menstrual cycle and infertility. Majority of women (52%)have an irregualr menstrual cycle of more than 45 days cycle.Women with irregualr menstrual cycles are at a risk for infertility. ($\chi 2=11.71$, P=0.01** DF=3 significant).

FIG 6- ASSOCIATION BETWEEN FREQUENCY OF SEXUAL INTERCOURSE AND INFERTILITY



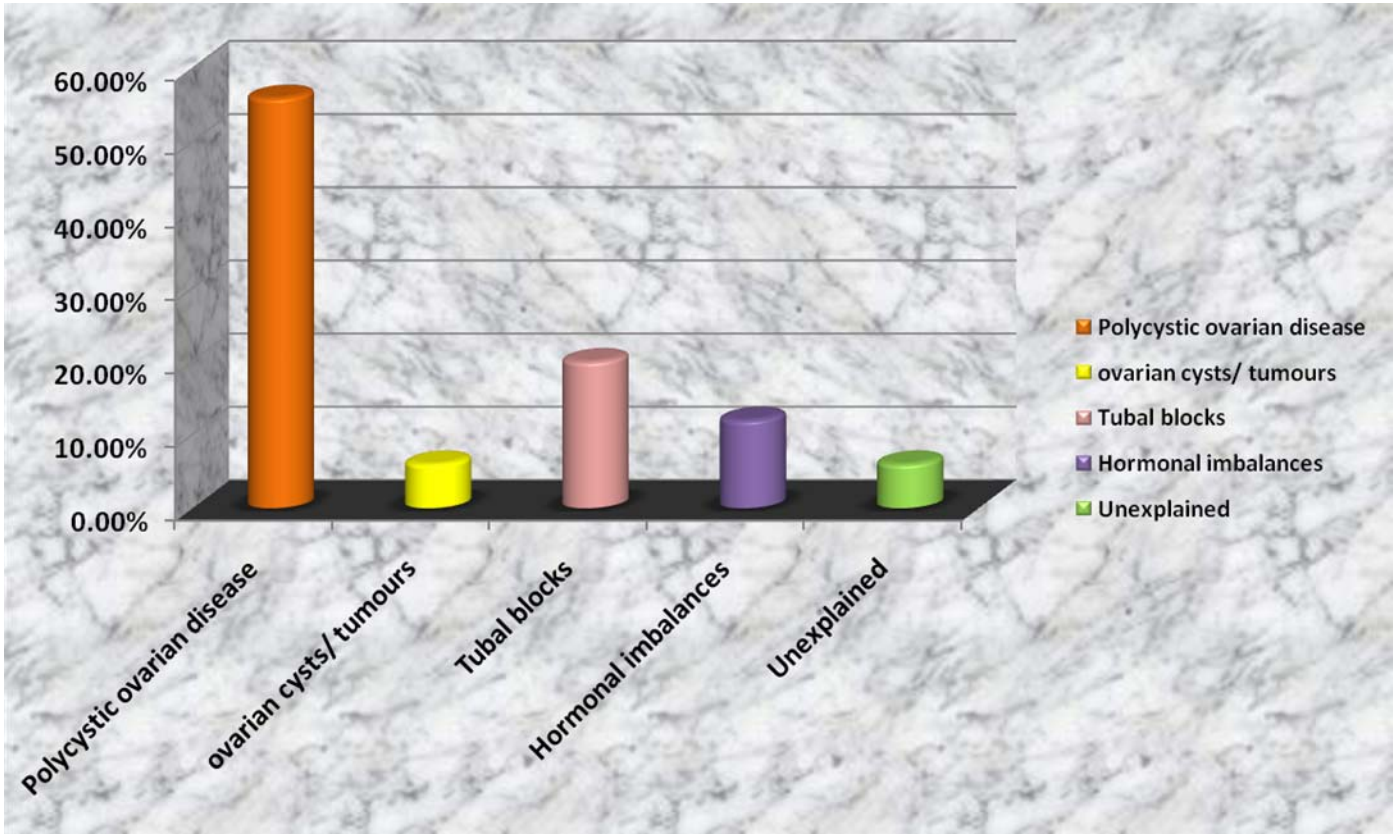
The above Figure depicts that the frequency of sexual intercourse is significantly associated with infertility. Majority of Women have a sexual intercourse(68%) only once a week,which is either too less for fertility,or also may end in a loss of coital activity in the fertile period. **(χ2=13.39 P=0.02** DF=3 significant).**

FIG-7: ASSOCIATION BETWEEN BMI AND INFERTILITY



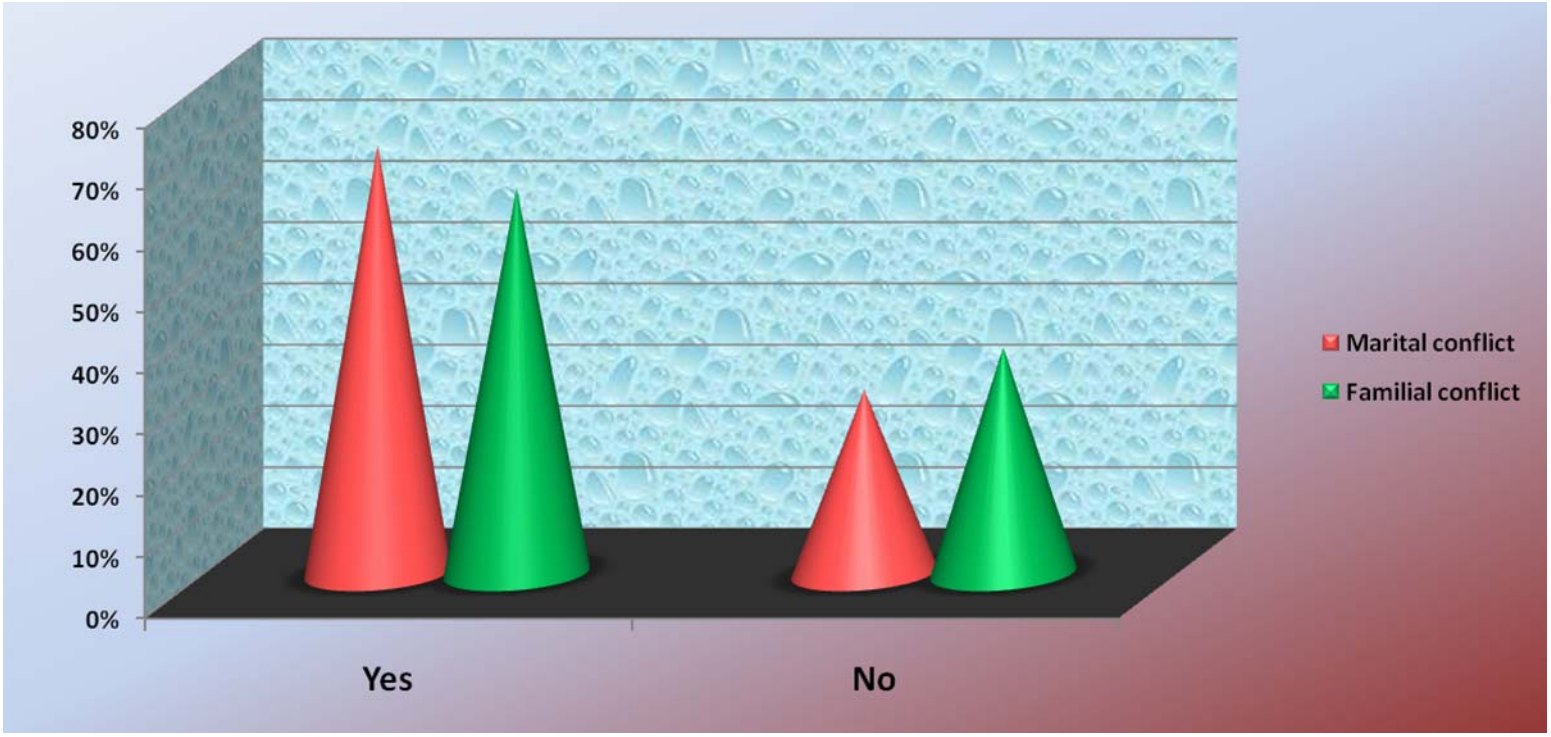
The above table depicts that Body mass index is significantly associated with infertility. Majority of Women who are overweight(45.0%),are at a risk of infertility. (χ2=18.76 P=0.01** DF=6 significant).

FIG-8: ASSOCIATION BETWEEN PCOD AND INFERTILITY



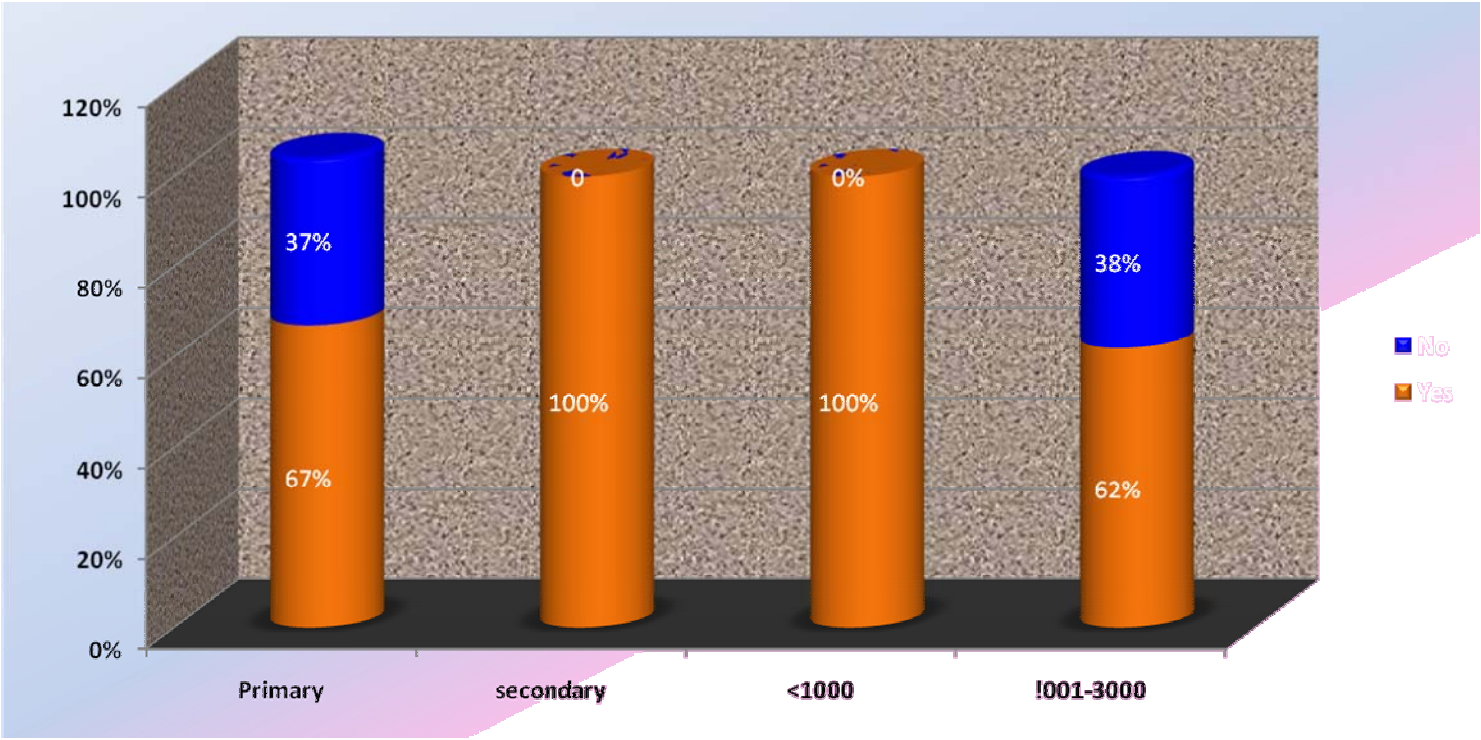
The above diagram infers that the diagnosed cause is significantly associated with infertility.Most of the women (56%) have a diagnosis of Polycystic ovarian disease.It is estimated that women with PCOD are at a risk of developing infertility. ($\chi 2$=18.76 P=0.01** DF=3 significant).

FIG-9: ASSOCIATION BETWEEN CONFLICTS AND INFERTILITY



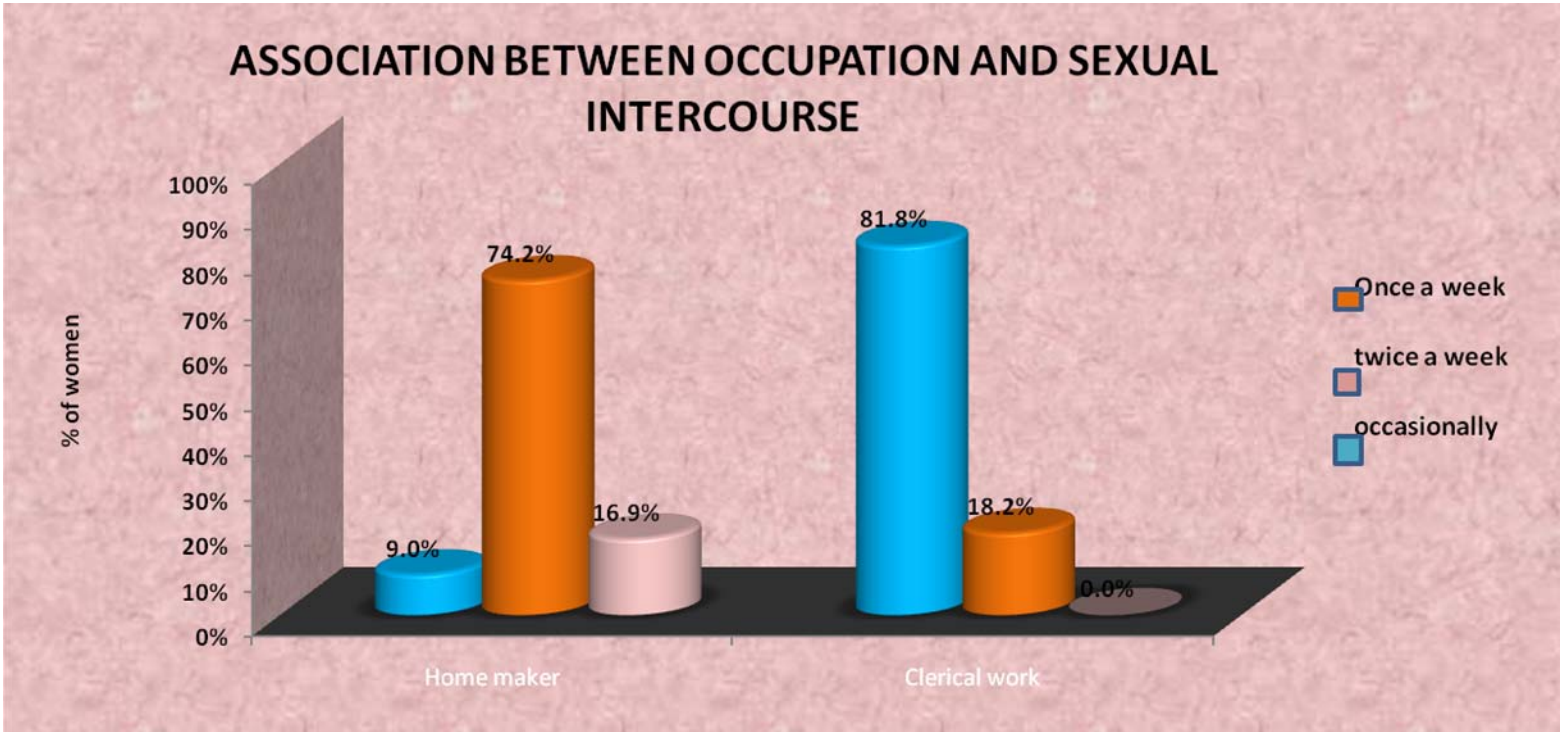
The above figure interprets that conflict is significantly associated with infertility.Majority of the women who attend the infertility clininc for imapired fertility also experience marital conflicts(70%),and (63%) familial conflicts . (χ2=11.39 P=0.01** DF=1 significant).

FIG-10: ASSOCIATION BETWEEN CONFLICTS AND DEMOGRAPHIC VARIABLES



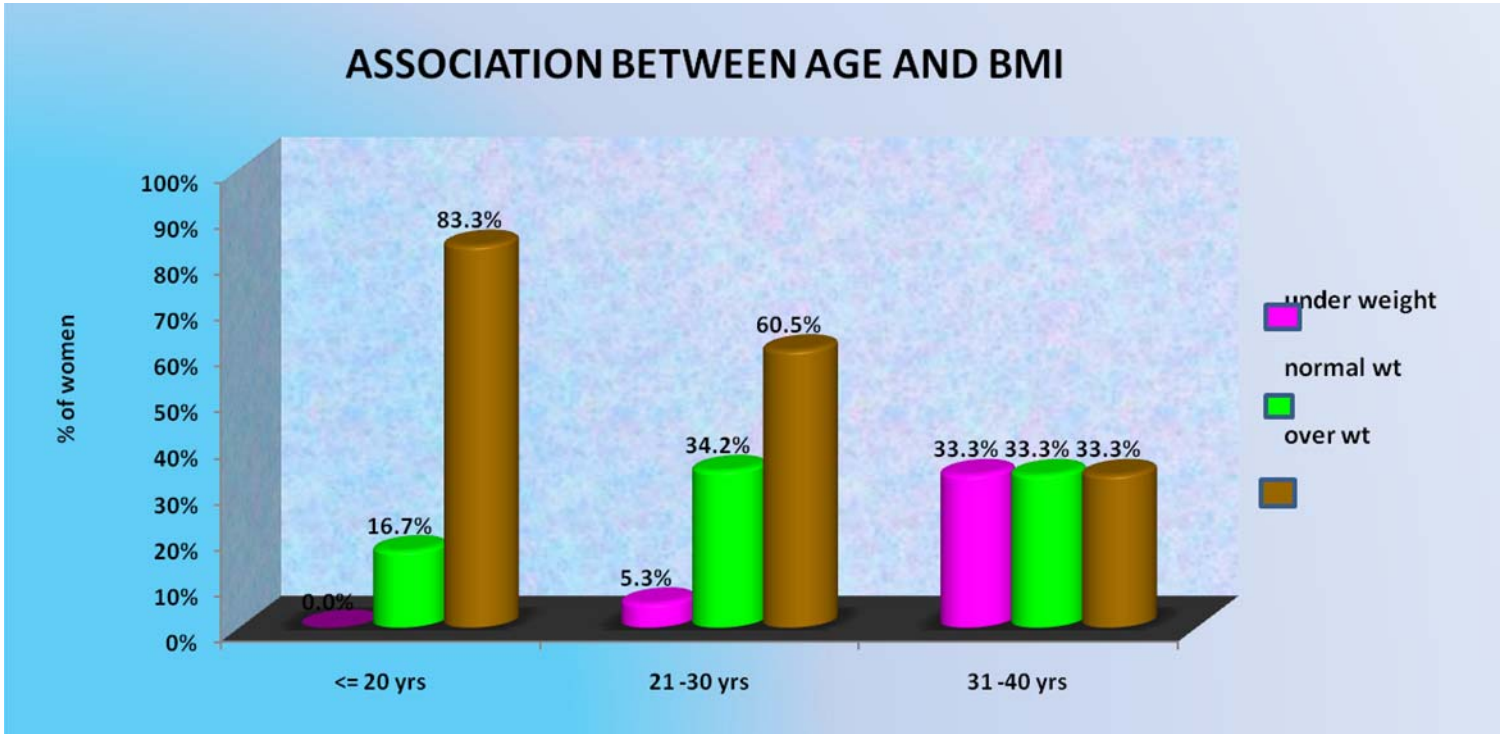
The above diagram depicts that educational level and monthly income are significantly associated with the conflicts. As the educational level increases, and with a less monthly income, conflicts are more. Both contribute towards stress and indirectly to infertility.($\chi 2=7.56$ P=0.006** DF=2 significant), ($\chi 2=11.39$ P=0.01** DF=1 significant).

FIG-11: ASSOCIATION BETWEEN OCCUPATION AND SEXUAL INTERCOURSE



The above figure shows that sexual activiy is significantly associated with the occupation.Women who are employed involve in sexual activity lesser, and hence may either have a sexual dislike or tiredness, which inturn may be a factor for infertility. (χ2=36.91 P=0.001*** DF=2 significant)

FIG-12: ASSOCIATION BETWEEN AGE AND BMI



The above diagram shows that BMI is significantly associated with the age of women.Women who are over weight are mostly in the younger age group,and they tend to be at a risk for developing infertility. ($\chi 2=14.81$ P=0.005 DF=4 significant)

CHAPTER – V
DISCUSSION

Women are always appreciated for all what they are. Through ages, one of the reasons behind this greatness and uniqueness in women is their Motherhood. A woman is complete when she attains her pregnancy. Our country always, has a custom which respects Mothers a lot. Even we celebrate a day for Mothers. But, where is this happiness in the life of an infertile woman. To procreate is a gift, but it is not given to all at times. A woman's age is probably the most significant factor related to her ability to conceive. In addition to age, there are a number of conditions that can interfere with a woman's fertility. Social impact of childlessness is more in India. stress related to infertility and, infertility related stress both go hand in hand.

This study was an attempt o identify the common factors contributing towards infertility. As the investigator had evidenced many psychological and social problems experienced by these women with infertility, it was planned to take up such a study. Some most common factors were identified through this study, which have been analyzed and interpreted. This chapter deals with a detailed discussion on the study findings interpreted from the statistical analysis. The findings are discussed in relation to the objectives of the study.

The socio demographic characteristics of the clients attending infertility clinic are depicted in table 2. It was observed that higher proportion of women with infertility (76 %) were within the age group of 21 – 30 years of age, more than half (85 %) of them had a primary education ,and majority (89%) of them were home makers. More than half of (77%) them were living in a nuclear family, and also husband is the bread winner (93%) in the family. Majority of the women are Hindus (77%) and also reside at urban region (52%).The socio Demographic data of the respondents reveal that infertility is more prevalent among the middle aged women. Women who are homemakers are those who come out with their problems to such infertility clinics. The reason behind this is that most of the working women are exposed to a wider view of the world, and get a better social support of friends. Also, their working conditions are an

emotional support to them. Comparatively these homemakers are left behind for either their family members, or neighbors to put them in obscure vain. Hence the come forward earlier for investigations and for treatment.

The first objective of the study was to identify the risk factors associated with infertility.

The menstrual and marital history of the women which serve as some of the gynaecological factors associated with infertility are interpreted in tables no: 3 & 4. It reveals that more than half of the women with infertility(80%)had attained menarche at the age of between 13 – 15 years, majority (52%)of them have a menstrual cycle of once in more than 45 days. Women who had an irregular menstrual cycle were always at a risk of developing infertility to a certain extent. Also a higher proportion (60%) of them had dysmenorrhea associated with menstruation always. It shows that a higher proportion of the women with infertility (70%)had been married at the ages between 21 – 25 years, majority of them (86%) had a non consanguineous marriage also that a higher proportion (61%) of them have a marital life for about 3–5 years.

The psychological and Lifestyle factors associated with infertility among the women were inferred from tables 5 to table 7. They show that majority of the women with infertility experience marital conflicts (70%) and also experience familial conflicts (63%). A higher proportion (62%) had reported that their spouse cares for them only at times. It was inferred that a higher proportion of women (93%) are non vegetarians, more than half them (63%) have a meal pattern of 2 meals, and almost all of them practiced only household activities rather than exercises. It was also depicted from the interpretation that majority of the women had sexual intercourse only once week. Once a week is a very less sexual activity for a good fertility activity to occur. Also, some women may miss out their fertile period, which also may contribute to infertility. It was interpreted that majority(45%) of the women were overweight, and the diagnosed cause of most of them (56%) was Polycystic ovarian disease. Also among the women with hormonal imbalance majority of them (8%) had an increased level of serum prolactin levels.

(Kelly-Weeder S & Cox CL) suggested that some factors were directly related to infertility as increasing age, lack of exercise, PCOS, a history of an ectopic pregnancy, current smoking, obesity, and self reported health status. It was concluded that routine well-women visits offer an excellent opportunity to begin to address the impact of selected risk factors for infertility. In this study also, the investigator had reported that PCOD was one of the major identified risk factors, and obesity was identified among higher proportion of women who came with infertility. Clinicians and also Nursing personnel can utilize these visits to target appropriate interventions for initiating, repeating, and reinforcing messages on fertility risk. Risk factors of infertility also include pelvic inflammatory diseases, post-abortion complications' history, drug treatment history, dysmenorrhea, monthly frequency of sexual intercourse and mental stress (He X, Hou Q)According to the investigator, irregular menstrual cycle and dysmenorrheal episodes were among the identified risk factors for infertility.

There were 6 factors responsible for infertility with statistical significance as advanced age, elevated body mass index, age of onset of sexual activity, prior pelvic surgeries, and presence of stress (Romero Ramos R).

The above mentioned studies have all supported the identified risk factors in the investigation carried out .It can hence be discussed in the context of the study variable that infertility is multidimensional in its occurrence. There are a number of risk factors which contribute either directly or indirectly to infertility. The investigator has identified some important factors which are related to infertility in our current Scenario.

The second objective of the study was to associate each individual risk factor with infertility

The association of the risk factors with infertility were clearly projected from the figures to figure5. It was observed that many factors were inter related with infertility. Commonly identified were that women with irregular menstrual cycle (52%), women who are over weight (45%) and women who are diagnosed with PCOD (52%), women with increased serum prolactin levels (8%) etc, were also having infertility. Early at menarche itself irregular menstrual cycle

may be a problem, which usually stays unidentified and untreated. It may also be of multidimensional etiology. When a women with this problem is married and, if she is childless for a period of more than two years, only then this irregular menstrual issue is noted off for its importance in our culture. Obesity has always contributed to infertility from ages. One of the reason behind this is that excessive fat alters the normal hormonal levels need for the ovulation, thus ending in alterations in ovulation pattern. Ultimately infertility sets in. PCOD is not a problem which emerges just in the fertility period, it also has its development usually at early reproductive ages. But its presence is usually detected only during infertility treatment.

Major contributions were also from psychological stress (70%) and lifestyle practices (68%).In today's fast moving world the major importance for humans has been shifted towards economical welfare. One of the reasons behind a lot of marital separation is also this. There is also the emergence of ego and other social events which take up their roles individually in creating mishaps among young couple, and also their families. This results in marital stress, which in turn may influence the fertility indeed. Food habits and lifestyle changes have brought forward a lot of influences in human fertility not at all times, these contributions are fruitful. They may at times be the other way also.

It was reported that in case of hyper-androgenemic oligoamenorrhea, especially the polycystic ovarian syndrome, future fertility is reduced but may be improved by preventive measures and therapy in adolescence. In patients with primary ovarian insufficiency and persisting hyper-gonadotropic amenorrhea, the prognosis for fertility is poor (Tscherne G). Obesity is known to cause an ovulation, sub fecundity; increased risk of fetal anomalies and miscarriage. Preconceptual counseling for obese women is a must as weight reduction helps in reducing pregnancy-related complications (Sathya A). The investigator, in this study had identified that there existed a significant association between factors as obesity, PCOD, increased serum prolactin levels, irregular menstrual cycle and decreased sexual activity and infertility.

Fertility problem stress has direct effects that increase marital conflict and decrease sexual self-esteem, satisfaction with own sexual performance, and frequency of sexual intercourse and the vice versa (Andrews FM). All the above mentioned studies are very much similar to the investigators study findings. Most commonly identified factors are obesity, lifetime stress, Polycystic ovarian disease, hormonal imbalance etc. The world is fast moving. Globalization has contributed a lot in its part to many technical advancements. Yet infertility is a global health issue. Each individual risk factor is solely related to infertility on its part to a certain degree.

The third objective of the present study was to find the association between the risk factors and selected demographic variables.

Inference of the association between the risk factors and selected demographic variables were made from table no: 9 and figures 9 to figure 11appropriately. They show that women in nuclear family have more irregular menstrual cycle, which is at a risk for infertility. When in a nuclear family, most of them entertain themselves either in their job place, or television at home. There are no sources guiding them in proper activities to be done. Also the work performed by them is comparatively less than those in a joint family. Thereupon physical activity, needed for adequate balance of the hormones, and utilization of energy is affected, contributing to infertility.

The results have also shown that as the educational level increases the marital conflicts are more. Thiscontribute towards stress and indirectly to infertility. Women who are employed involve in sexual activity lesser when in comparison with those at home. In course of time, they loose their interest in sexual life, ending in nifertility. Also, the women tend to miss their fertilie period from having sexual intercourse, which is the pivotal role for child. Women who are over weight are mostly in the younger age group. Young women are the pillars for procreation. Due to many lifestyle practices, and other technical changes, they tend to gain a lot of weight. The obesity alters the total body systems including hormonal changes. This inturn contributes on its part to infertility.

Kelly-Weeder S, &O'Connor A. 2006 conducted a study to provide an overview of impaired fertility in childbearing-aged women, to review the current research on modifiable lifestyle risk factors implicated in its development, and to suggest strategies for nurse practitioners (NPs) to assist women in behavioral changes that will allow them to protect their fertility. They have suggested that advancing age, a history of a sexually transmitted infection and/or pelvic inflammatory disease, extremes of body weight, and tobacco and caffeine use are potentially modifiable risk factors in the development of impaired fertility. They also have recommended that NPs must be aware of the link between these behaviors and the development of impaired fertility in order to assist women in preserving their fertility. Individual counseling, education, and community-wide education strategies are discussed.

Dunphy BC, conducted a study to determine whether female age exerts an influence on the fertility outcome of couples attending an infertility clinic, independent of demographic and clinical details; and secondly to examine the relationship between the length of involuntary infertility prior to investigation and the subsequent chance of conception. The results of the study were that 124 women conceived, 2 females had hysterectomy, 4 couples started using contraception and 14 couples separated. An analysis was performed on all of the couples entering demographic and clinical information. A Spearman correlation was performed and a significant association was found with the following: female age, incidence and severity of ovulatory dysfunction, tubal occlusive disease, pelvic adhesions, endometriosis, and female age. The investigator had also observed from her analysis that women in their early adulthood were more among those who availed infertility treatment. It was also observed that more of those who were in young age group were among the over weight clients, who are the future generation for procreation.

The investigators finding were similar to these study findings as they also proved that there exist a relation between selected demographic variables and risk factors. The above mentioned studies serve as an evidence that selected risk factors are related either directly or indirectly to infertility.

The fourth objective of the present study was to prepare a self instructional module on prevention of modifiable factors of infertility based on the study findings.

The investigator felt that there were many identified factors which were modifiable and with certain modifications those can be prevented. By creating more awareness on those factors, it was believed that infertility risk can be reduced at least to a certain degree.

CHAPTER-VI
SUMMARY AND CONCLUSION

6.1 SUMMARY

Infertility is becoming more and more an increasing issue in current scenario. In our culture childlessness is greatly spoken off as a feminine problem. Hence nowadays it's become more a social issue than a medical one. And ultimately the society blames the couple, especially the women for this mishap. Since the magnitude of this problem is increasing day by day,in future ,there may be young couples who only have children in their dreams. As it is the rights of individual, so they have rights to know about the factors which stand as obstacles for bearing children. If there is more awareness on the modifiable factors contributing towards infertility, and its preventive methods, this threat may be decreased.

The study "To identify the risk factors associated with infertility among women attending infertility clinic at Institute of Obstetrics and Gynaecology" was an attempt to identify the risk factors of infertility.

The main objectives of the study were

1) To identify the risk factors associated with infertility

2) To associate the risk factors with infertility

3) To associate the risk factors with selected demographic variables

4) To prepare a self instructional module on prevention of modifiable factors based on study findings.

The data was collected for a period of four weeks during December 2010 to January 2011. Hundred samples were selected by systematic random sampling technique and structured interview schedule was used to collect data. The statistical analysis was done using Percentage, mean, Standard deviation, and Pearson Chi-Square tests. The findings were discussed based on the objectives of the study.

6.2. MAJOR FINDINGS OF THE STUDY

6.2.1 FINDINGS ON RISK FACTORS

Menstrual and Marital factors

1) Majority of the subjects (80%) had attained menarche at the ages between 13 to 15 years.

2) Majority of the subjects (52%) had a menstrual cycle interval of once in more than 45 days.

3) Majority of the subjects (48%%) had a menstrual flow for a period of 3 to 5 days.

4) Majority of the subjects (66%) had pre menstrual symptoms always.

5) Majority of the subjects (60%) had dysmennorhea always during menstruation

6) Majority of the subjects(70%) were married at the ages between 21 – 25 years.

7) Majority of the subjects (86%) had a non consanguineous marriage .

8) Majority of the subjects (61%) had a marital life period of 3 – 5 years

Psychological factors

1) Majority of the clients (70%) had experienced marital conflicts

2) Majority of the clients (63%) had also experienced familial conflicts

3) Majority of the clients (81%%) had an income which was sufficient to run the family

4) Majority of the clients (89%) had reported that their spouse was caring towards them only at times.

Lifestyle practices

1) Majority of the clients (92%) were non vegetarians

2) Majority of the clients (63%) had a meal pattern of regularly 2 meals /day

3) All the clients were only practising house hold activities, and not exercise.

4) Majority of the clients (68%) had a sexual contact only once a week.

Document Schedule

1) Majority of the clients (45%) were overweight

2) Majority of the clients (56%) had a diagnosis of PCOD

3) Majority of the clients (69%) had an increased level of Prolactin hormone

6.2.2. ASSOCIATION BETWEEN IRREGULAR MENSTRYAL CYCLE AND INFERTILITY

Women with irregular menstrual cycle were at a risk for developing infertility.

Majority of women (52%) had an irregular menstrual cycle of more than 45 days cycle.

6.2.3. ASSOCIATION BETWEEN BMI AND INFERTILITY

Body mass index is significantly associated with infertility.

Majority of Women who were overweight (45.0%),were at a risk of infertility.

6.2.4. ASSOCIATION BETWEEN PCOD AND INFERTILITY

Most of the women (56%) had a diagnosis of Polycystic ovarian disease.

It is estimated that women with PCOD were at a risk of developing infertility.

6.3.5. ASSOCIATION BETWEEN CONFLICT S AND INFERTILITY

Majority of the women (70%) who experienced marital conflicts attend the infertility clininc for imapired fertility.

6.2.6. ASSOCIATION BETWEEN RISK FACTORS AND SELECTED DEMOGRAPHIC VARIABLE

1) Women in nuclear family had more irregular menstrual cycle, which were at a risk for infertility.

2) As the educational level increased, and with a less monthly income, conflicts were more. Both contributed stowards stress and indirectly to infertility.

3) Women who were employed involved in sexual activity lesser, which indirectly contributes to infertility.

4) Women who were over weight were mostly in the younger age group, which inturn contributed on its part to infertility.

6.3. CONCLUSION

“May be it is God’s will”, this is one of the most painful things to hear. This statement implies that God chooses who should and should not be parents, rewarding children to the good and denying children from the bad. Many infertile couples do adopt children, enter foster care, and even mentor. However, they will never get to experience pregnancy, childbirth, or the closeness of breastfeeding. Also, the costs of adoption can by up to 3x more than IVF, even with the help of Social Services. Infertility is now a days one of the most spoken social issues.

This study identified certain modifiable factors contributing towards infertility. The study concluded that irregular menstrual cycle, marital and familial conflicts, overweight, more of non vegetarian foods, lack of exercise etc were some common risk factors associated with infertility. There was a significant association between most of these factors and infertility. Also they were significantly associated with certain demographic variables. They study thus also had a conclusion that with certain awareness on the modifiable factors and ways to modify them will always contribute towards betterment of women's health in terms of fertility. There are so many measures to diagnose infertility after its onset, but prevention is always better than cure. Likewise, by identifying the preventive and modifiable factors, infertility can be reduced in its occurrence. Also, this study takes its part in contributing, a few, to the achievements of Infertility reduction aspects

6.4. IMPLICATION OF THE STUDY

The present study findings have important implications for hospital, community, nursing practice, nursing education, and Nursing research. Adolescent girls can very well be explained earlier about these modifiable factors, such that they may plan their future fruitfully. Also educating on these aspects to young women prior to marriage may help them to conceive without mush of difficulty in these related aspects.

IMPLICATIONS IN NURSING PRACTICE

- Nurses are constantly in communication with clients for many care and educative purposes. Hence they can motivate young girls in adolescent clinics regarding this factors.

- Nurse can conduct regular Health education programme on the modification ways of those identified factors which will promote fertility.

- Nurse can organise awareness programmes in colleges to make young students aware of these factors, such that they may, well in advance identify and rectify their problems.

- Nurse can prepare teaching modules and learning materials for the family members of clients attending infertility clinic.
- Nurse can also provide individual counselling to women regarding stress reduction.

IMPLICATION ON NURSING EDUCATION

- Nurse educators can teach regarding these factors in class rooms such that students become more aware of it.
- Nurse educators can motivate young Nursing students to give health education to women on these factors effectively
- Nurse can involve in organising workshops Prevention of infertility and its management
- Involvement of students in training programme to create awareness of infertility and its cause.

IMPLICATIONS ON RESEARCH

The nurses can conduct research activities to find out the

- Male infertility factors
- Stress levels of infertile couple
- Methods to modify emotional stress due to infertility.
- Available assisted reproductive therapies for infertility.

6.5. RECOMMENDATIONS FOR FUTURE RESEARCH

- Comparative study to identify male and female infertility factors.
- A study to analyze the social stigma undergone by women with impaired fertility.
- An interventional study to identify the effectiveness of meditation in reducing stress among infertile couple.

- ❖ An interventional study on weight reduction and its effectiveness in promoting fertility.
- ❖ Young adolescents can be made aware of maintenance of normal body weight and diet pattern
- ❖ More stress on regular exercise among women in reproductive age, in premarital counselling can be added.
- ❖ Avoidance of marital and familial conflicts which in turn cause stress and infertility can be taught to young couples.
- ❖ Counselling on sexual habits and practices can be included in premarital counselling sessions for young men and women.

6.6. MERITS OF THE STUDY

1) The present study identified the common risk factors associated with infertility in our current scenario.
2) Studies identifying common factors in our set-up is quiet rare.
3) Questionnaire on infertility suits our culture.

6.7. LIMITATIONS

1) The study was restricted to a short duration.
2) The findings cannot be generalised because of small samples.
3) Most of the women who attended infertility clinic at Institute of Obstetrics and Gynaecology for first diagnosis, turned out with other institutions for further treatment.

BIBLIOGRAPHY

BOOKS

1) Abdella, (1978). Patient Care Through Nursing Research. Third Edition. Newyork : The Macmillan Publications.

2) Basavanthappa B.T, (2009). Nursing Research. Fourth Edition. Newdelhi: Jaypee Brothers Publications

3) Basavanthappa B.T, (2009). Nursing Theories, Second Edition. Newdelhi: Jaypee Brothers Publications

4) Bennet V Ruth & Brown K Linda, “Myles” text Book for Midwives, ELBS, Churchill Livingstone Publications

5) Bourne & Hawkins(20090,Shaws Textbook of Gynaecoloy,14th edition, (Reed) India, Elseiveir Publication

6) Buckley Kathleen and Kulb Nancy W(1993), “ High Risk Maternity Nursing Manual” Edn, Philadelphia, Williams & Wilkin Publications.

7) Calander, R & A Miller,(1993)‘Obstetrics illustrated’ IV edn, Newyork, Churchill & Livingstone Publications.

8) Dawn C.S, “ Textbook of Gynaecologfy and contraception”, Calcutta. Dawn Books Publications.

9) D.C Dutta,(2001.) “Text book of Gynaecology” ,5th edn, Calcutta, New Central Agency (p), Publications.

10) Daftary Shrish N EL AL , “ Holland and Brews Manual of Obstetrics”, 14th edn, New Delhi B I Churchill Livingstone PVT Ltd.

11) Dickason Elizabeth jean et al(1998), “ Maternal infant Nursing care, 2nd edn, ST. Louis, Mosby , Publications.

12) Fawcett Jacquilline, (1989), Analysis And Evaluation Of Conceptual Model Of Nursing, 1st Edition. Philadelphia : F.A.Davis Publications.

13) Gibbs S. Ronald (2008), Danforth's Obstetrics and Gynaecology, 10th edition, Philedelphia, Lippincott Williams and Wilkins Publication,

14) 15.GoodnerBrenda,(1994) " Concepts of Obsterics Nursing", I edn, Skidmore, Texas., Roth Publishing, INC,

15) Gorie Trula Myers et al (1998)" ,Foundations of maternal Newborn Nursing", II edn, Philadelphia, WB Saunders Coy,. Publications.

16) Gupta.S.P(1991), Statistical methods , Third edition. Newdelhi: Sultan Chand. Publications.

17) Hollan and Brews", Manual of Obstetrics", BI Churchill Livingstone Publications.

18) Jacob S Howard & Balen H Adams,(2005),"Infertility in practice",2nd edition, Elseivier Publication, Edinburg.

19) John Studd's (2000),"Progress in Obstetrics and Gynaecology",14th Volume, London, Churchill Livingstone Publication.

20) K.Park,(2007). "Preventive and social medicine". 19th Edition. Jabalpur: Bhanot publications.

21) Kothari,C.R,(1988)" Research Methodology Methods And Techniques" 1st edition. Wheiy eastern LTD.

22) Ladewing Patricia Wieland et al , " Essentials of Maternal Newborn Nursing", 2nd edn, Addisol Wesley Nursing, NY, 1990. Publications.

23) McMilan J.H., Schumacher, (1989). Research In Education Conceptual Introduction .Newyork: Harper Collies. Publications.

24) Menon Krishna & Palaniappan,(1990) "Clinical Obstetrics", 10th Edition Madras,Orient Longman, Publications.

25) Nancy Burns etal,(2005). The practice of nursing research, 5th Edition. Philadelphia, Elsevier publications.

26) Pilliterri,(1981),Adale. Child Health Nursing: Care Of Growing Family. 2nd edition. Boston, little Brown and company. Publications.

27) Polit and Hungler, (2009). Nursing research principles and methods, 8th Edition, Philadelphia: J.P.Lippincott. Publications.

28) Philips Celeste R ,(1996) " Family centered Maternity Newborn care", 3rd edn, St Louis Mosby New yearBook, Publications.

29) Rashmi Patil, " Instruments, Operations, Drugs in Obstetrics and Gynaecology", Vors Medical Publications.

30) Sabaratnam Arulkumaran & Gopalan Sarala(2009),Obstetrics and Gynaecology for post graduates,3rd edition, Hyderabad,Orient Longman Publication,

31) Shaw .W.robert &Luesley David(2010),Gynaecology,4th edition, London Churchill Livingstone Publication,

32) Sodashy and Yafle B.J,(1993). Nursing theory analysis application evaluation, 2nd edition. Boston: Little Brown Publications.

33) Tindall VR, Jeffcoate's Principles of Gynaecology", Butterworth Heineman. Publications.

34) Wonna Donna L, Perry Shannon et al", Maternal child Nursing", 1998, 1st edn, London CV Mosby coy, Publications.

JOURNALS

35) Andrews FM, et.al. (2001); Stress from infertility, marriage factors, and subjective well-being of wives and husbands ; Journal of Health and Social Behavior 211 - 213

36) Bahamondes L, et.al. (2004); Identification of main risk factors for tubal infertility. Fertility Sterility Journal 456-458

37) Benagiano G, et.al (2006); Infertility: a global perspective; Minerva Gynecological Journal.13 :332 - 338

38) Bello TO. (2006); Tubal abnormalities on hysterosalpingography in primary and secondary infertility;West African Journal of Medicine 567-570

39) Boivin J. (2003); A review of psychosocial interventions in infertility; Social Science and Mediscine.124-127

40) Bunting L, & Boivin J. (2008); Knowledge about infertility risk factors, fertility myths and illusory benefits of healthy habits in young people; Hum Reproduction Journal.

41) Hull MG. (2007); Epidemiology of infertility and polycystic ovarian disease: endocrinological and demographic studies ;Gynecological Endocrinology Journal.

42) Herod SM, et.al (2011); Sensitivity to stress-induced reproductive dysfunction is associated with a selective but not a generalized increase in activity of the adrenal axis. American Journal of Physiology& Endocrinology 378 - 383

43) Inhorn MC (2003) Global infertility and the globalization of new reproductive technologies: illustrations from Egypt; Social Science & Medicine. 24 : 490 - 495

44) Kitilla T (2010); Hysterosalpingography in the evaluation of infertility: a five years review ;Ethiopia Medical Journal.

45) Kraaij V, et.al (2010); Cognitive coping, goal adjustment, and depressive and anxiety symptoms in people undergoing infertility treatment: a prospective study ; Journal of Health Psychology

46) Kraaij V, et.al (2008); Cognitive coping and depressive symptoms in definitive infertility: a prospective study; Psychosomatic Obstetrics & Gynecology.

47) Kumar A, et.al (2010); Latent ovarian disease in reproductive performance of women. Fertility Sterility.234 - 239

48) Majumdar A,& Singh TA (2009); Comparison of clinical features and health manifestations in lean vs. obese Indian women with polycystic ovarian syndrome ;Journal of Human Reproductive Science673 - 678.

49) Kelly-Weeder S,& Cox CL (2006); The impact of lifestyle risk factors on female infertility ;Women Health.

50) Kelly-Weeder S, & O'Connor A (2006) ; Modifiable risk factors for impaired fertility in women: what nurse practitioners need to know; Journal of American Academy of Nurse Practioner.

51) Ombelet W, et.al (2008) ; Infertility and the provision of infertility medical services in developing countries ; Human Reproduction .

52) Pritts EA, et.al (2009); Fibroids and infertility: an updated systematic review of the evidence ; Fertility Sterility. 136-140

53) Romero Ramos R, et.al (2008); Risk factors associated to female infertility ; Gynecology & Obstetrics Journal - Mexico.

54) Safarinejad MR (2008); Infertility among couples in a population-based study in Iran: prevalence and associated risk factors ; International Journal of Andrology.

55) Sundararaman PG, et.al (2008); Psychosocial aspects of women with polycystic ovary syndrome from south India ;Human Reproduction

56) Somigliana E, et.al (2007); Fibroids and female reproduction: a critical analysis of the evidence ; Human Reproduction

57) Sathya A, et.al (2010); Effect of body mass index on in vitro fertilization outcomes in women ;Journal of Human Reproduction and Science

58) Zhonghua Yi Xue Za Zhi.(2001) ;Risk factors for tubal infertility in child-bearing aged women: a hospital-based case-control study; Journal of Obstetrics, Gynaecology and Neonatal Nursing.

NET SOURCES

59) en.wikipedia.org/wiki/Intrauterine_de...

60) www.emedicinehealth.com/birth_control...

61) www.smbcorpn.com/copper-t-380a.html

62) familydoctor.org/online/famdocen/home

63) www.acog.org/publications/patient_edu...

64) www.pregna.com/html/writeup_ideals.pdf

65) www.medterms.com/script/main/art.asp%...

66) www.fwhc.org/birth-control/iudinfo.htm

67) kidshealth.org/teen/sexual_health/con

68) en.wikipedia.org/wiki/Intrauterine

69) www.medhelp.org/posts/Birth-Control-C

70) www.mothersclick.com/questions/mirena

71) www.steadyhealth.com/Mirena_IUD_Side.

ABSTRACT

A study to identify the risk factors associated with infertility among women attending infertility clinic at institute of obstetrics and gynecology, Egmore, chennai -8.

INTRODUCTION

Reproduction is the gift of God to all living creations. God created this world for all his living creations to reproduce and fill and flourish it. Fertility plays a vital role in a woman's life. In our tradition fertility is the most important part of marital life. Loss of this precious aspect, indeed results in stress. infertility is the inability to become pregnant even after one year of unprotected sex. Both men and women contribute to this threat. According to the American Society for Reproductive Medicine the prevalence of infertility is about 5.3 million among the Americans, or 9% of the reproductive age population. childlessness is around 2.5% in India.

AIM OF THE STUDY

To identify the risk factors contributing to infertility and to associate the risk factors with infertility. Based on the study findings prepare a self instructional module on prevention of modifiable factors based on study findings.

METHODOLOGY

It was a descriptive study .The study was conducted in the infertility clinic at the Institute of Obstetrics and Gynaecology, Hospital for Women and Children; Chennai.100 women attending the infertility clinic were selected as the samples by systematic random sampling. The tool used for the study was Structured Interview Schedule and Document Schedule.

RESULTS

This study identified certain modifiable factors contributing towards infertility .There was a significant association between most of these factors

and infertility. Also they were significantly associated with certain demographic variables. They study thus also identified that with certain awareness on the modifiable factors and ways to modify them will always contribute towards betterment of women's health in terms of fertility. Women with irregular menstrual cycle were at a risk for developing infertility. Body mass index was significantly associated with infertility. It was estimated that women with PCOD were at a risk of developing infertility. Majority of the women (70%) who experienced marital conflicts attend the infertility clinic for infertility.

CONCLUSION

The study concluded that irregular menstrual cycle, marital and familial conflicts, overweight, more of non vegetarian foods, lack of exercise etc were some common risk factors associated with infertility.

INSTITUTIONAL ETHICS COMMITTEE
MADRAS MEDICAL COLLEGE, CHENNAI -3

Telephone No: 04425305301
Fax : 044 25363970

CERTIFICATE OF APPROVAL

To

Ms. Judith Mary
M.Sc Nursing II year
College of Nursing
Madras Medical College , Ch-3

Dear Ms. Judith Mary

The Institutional Ethics Committee of Madras Medical College reviewed and discussed your application for approval of the proposal entitled "Identify the factors associated with infertility among women attending infertility clinic at the Institute of Obstetric and Gynaecology, Chennai -1" No. 09122010.

The following members of Ethics Committee were present in the meeting held on 28.12.2010 conducted at Madras Medical College, Chennai -3.

1. Prof. S.K. Rajan, MD	-- Chairperson
2. Prof. J. Mohanasundaram, MD,Ph.D,DNB Dean, Madras Medical College, Chennai -3	-- Deputy Chairman
3. Prof. A. Sundaram, MD Vice Principal , MMC, Chennai -3	-- Member Secretary
4. Prof R. Sathianathan Director , Institute of Psychiatry, MMC,Ch-3	-- Member
5. Prof R. Nandhini, MD Director, Institute of Pharmacology, MMC, Ch-3	-- Member
6. Prof. Pregna B. Dolia , MD Director, Institute of Biochemistry, MMC, Ch-3	-- Member
7. Thiru. S. Govindasamy BA.BL	-- Lawyer
8. Tmt. Arnold Soulina	-- Social Scientist

We approve the Proposal to be conducted in its presented form.

Sd /. Chairman & Other Members

The Institutional Ethics Committee expects to be informed about the progress of the study, any SAE occurring in the course of the study, any changes in the protocol and patient information / informed consent and asks to be provided a copy of the final report

Member Secretary, Ethics Committee

CONTENT VALIDITY

This is to certify that the tool developed by ***Mrs.Judith Mary,*** *M.Sc (N)., II Year, College of Nursing, Madras Medical College, Chennai-3 for her topic* ***"To identify the risk factors associated with infertility among women attending infertility clinic at Institute of Obstetrics and Gynaecology, Egmore, Chennai"*** *is validated by me and she can proceed with this tool to conduct the main study.*

SIGNATURE:

NAME: Mrs. S. SAHELINA

SEAL: M.S.A.J. COLLEGE OF NURSING
180, THAMBU CHETTY STREET
CHENNAI 600 001

DATE: 9/8/10

CONTENT VALIDITY

This is to certify that the tool developed by ***Mrs.Judith Mary,*** *M.Sc (N)., II Year, College of Nursing, Madras Medical College, Chennai-3 for her topic* ***"To identify the risk factors associated with infertility among women attending infertility clinic at Institute of Obstetrics and Gynaecology, Egmore, Chennai"*** *is validated by me and she can proceed with this tool to conduct the main study.*

SIGNATURE: C. Susila

NAME: C. Susila

SEAL: Prof. Dr. C. SUSILA M.sc (N) Ph.d PRINCIPAL BILLROTH COLLEGE OF NURSING

DATE:

From

J.JUDITH MARY,
II year M.Sc (N)
College of Nursing,
Madras Medical College,
Chennai – 600 003.

To

THE DIRECTOR,
Institute of Obstetrics and Gynaecology and
Government Hospital for Women and Children,
Egmore, Chennai – 600 008.

Through Proper Channel

Sub: Permission for conducting study in Infertility Clinic at IOG, request regarding.

Respected Sir/Madam,

Kindly permit M.Sc (N) II Year Judith Mary to conduct a study on topic mentioned below at the Infertility Clinic as a part of my curriculum requirement. The study period is from 1.11.2010 to 30.11.2010.

The topic is **"To identify the risk factors associated with infertility among women attending infertility clinic at Institute of Obstetrics and Gynaecology, Egmore, Chennai"**

Kindly consider my request and permit me to conduct the study.

Thanking you,

Yours sincerely,

(J.JUDITH MARY)

Forwarded

DR. P. MANGALA GOWRI, MSc (N), PhD
PRINCIPAL
COLLEGE OF NURSING
MADRAS MEDICAL COLLEGE
CHENNAI - 600 003.

Director and Superintendent
Institute of Obstetrics and
Gynaecology and Govt. Hospital
for Women and Children,
EGMORE, MADRAS-8.

Date : 12.08.2010
Place : Chennai – 3.

ஆராய்ச்சி தகவல் தாள்

இம் மருத்துவமனைக்கு வரும் நோயாளிகளிடம் இருந்து ஒரு ஆராய்சிக்காக தங்களிடமிருந்து தகவல் பெறப்படுகின்றது.

முடிவுகளை அல்லது கருத்துகளை வெளியிடும் போதோ அல்லது ஆராய்ச்சியின் போதோ தங்களது பெயரையோ அல்லது அடையாளங்களையோ வெளியிட மாட்டோம் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

இந்த ஆராய்ச்சியில் பங்கேற்பது தங்கலுடைய விருப்பத்தின் பேரில் தான் இருக்கிறது. மேலும் நீங்கள் எந்நேரமும் இந்த ஆராய்ச்சியிலிருந்து பின் வாங்கலாம் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

இந்த சிறப்பு பரிசோதனைகளின் முடிவுகளை ஆராய்ச்சியின் போது அல்லது ஆராய்ச்சியின் முடிவின் போது தங்களுக்கு அறிவிப்போம் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

ஆராய்ச்சியாளர் கையொப்பம் **பங்கேற்பாளர் கையொப்பம்**

ஆராய்ச்சி ஒப்புதல் படிவம்

ஆராய்ச்சி தலைப்பு

பெயர்: தேதி:
வயது: உள்நோயாளி எண்:
பால்: ஆராய்ச்சி சேர்க்கை எண்:

இந்த ஆராய்ச்சின் விவரங்கலும் அதன் நோக்கங்களும் முழுமையாக எனக்கு தெளிவாக விளக்கப்பட்டது.

எனக்கு விளக்கப்பட்ட விஷயங்களை நான் புரிந்து கொண்டு நான் எனது சம்மதத்தை தெரிவிக்கிறேன்.

இந்த ஆராய்ச்சியில் பிறரின் நிர்பந்தனையின்றி என் சொந்த விருப்பத்தின் பேரில் தான் பங்கு பெறுகிறேன் மற்றும் நான் இந்த ஆராய்ச்சியிலிருந்து எந்நேரமும் பின்வாங்கலாம் என்பதையும் அதனால் எந்த பாதிப்பும் ஏற்படாது என்பதையும் நான் புரிந்து கொண்டேன்.

நான் என்னுடைய சுய நினைவுடனும் மற்றும் முழு சுதந்திரத்துடனும் இந்த மருத்துவ ஆராய்ச்சியில் என்னை சேர்த்துக் கொள்ள சம்மதிக்கிறேன்.

நான் இந்த ஆராய்ச்சிக்கு என்னுடைய முழு ஒப்புதலை தெரிவிக்கின்றேன்.

கையொப்பம்

STRUCTURED INTERVEIW SCHEDULE

The confidentiality and anonymity of the collected information will be strictly maintained.

SECTION A : DEMOGRAPHIC DATA

1.What is your age ? _____ ☐

a) <20 yrs ☐

b) 21 – 30 yrs ☐

c) 31 – 40 yrs ☐

d) > 41 yrs

2. What is your educational qualification ? ____☐_____

a) Non formal education ☐

b) Primary education ☐

c) Secondary education ☐

d) Collegiate/ Professional

3. What is your occupation ? _____

a) Homemaker ☐

b) Labourer ☐

c) Clerical work ☐

d) Business ☐

e) Professional ☐

4. What type of family are you living in ? ☐

a)Joint Family ☐

b) Nuclear Family

5. What is your family income per month ? ☐

a)<1000 ☐

b)1001 – 3000 ☐

c)3001 – 5000 ☐

d)>5001

6. Who is the bread winner of your family?

a) Husband ☐

b) Wife ☐

c) Both ☐

d) Some elders ☐

7. Which religion do you belong to?

a) Hindu ☐

b) Christian ☐

c) Muslim ☐

d) Others

8. Where do you reside? ☐

a) Urban

b) Urban Slum

c) Suburban

d) Rural

Part II : Gynaecological factors

a)Menstrual and Marital history

9.What is your age of menarche ? _____

a)10 – 12 years

b) 13 – 15 years

c) 16 – 17 years

d) >17 years

10.. What is the pattern of occurrence of menstrual cycle ? _____

a) Once in 28 days

b) Once in 28 – 32 days

c) Once in 33 – 45 days

d) >45 days

e) Twice in a month

11..How many days of flow do you have during menstruation ? _____

a) less than 2 days

b) 2 – 3 days

c) 3 – 5 days

d) 5 – 7 days 

12.. Do you have premenstrual symptoms?

a)Always present

b)rarely present

c) not present

13.. Do you experience dysmenorrhea, abdominal cramps during menstruation ?

a)Always present

b)rarely present

c) not present

14. What was your age at marriage?

a) less than 20 yrs

b)21 – 25years

c) 26 – 30 years

d) Above 30 years

15. What type of marriage was it ?

a) Consanguineous

b) Non Consanguineous

16. How many Years of Marital life have you completed ? _____

a) 1 – 2years

b) 3 - 5 years

c) 6 – 8 years

d) > 8 years

Part II : Psychosocial factors

17. Do you have marital conflicts

a)Yes

b) No

18. Do you have conflicts with your In La

a) Yes

b)No

19. Is your income sufficient to run your family

a)Yes

b)no

20. Is your spouse caring towards you

a) Yes

b) No

21. If yes

a) Always

b) At times

c) Rarely

22. Do you experience any job /social stress

a) Yes

b) No

Part III : Lifestyle Factors

23. What type of food do you take?

a)Vegetarian ☐

b) Non vegetarian ☐

24. What is the frequency of meals?

a)Regularly 3 meals ☐

b) Regularly 2 meals ☐

c) Irregular meal timings ☐

25. What are your food habits ?

a) more of vegetarian ☐

b) more of non vegetarian ☐

c) more junk foods ☐

d) more fried foods ☐

26.What type of exercise do you practice?

a) Household works ☐

b) Walking ☐

c) mild jogging ☐

d) Others ☐

27.Do you have any Personal habits?

a) Betel nut chewing ☐

b) Tobacco chewing ☐

c) Smoking ☐

d) Alcohol ☐

e) None ☐

28.Are you exposed to passive smoking? ☐

a)Yes ☐

b) No

29. How often do you have Sexual intercourse ?

a) Once a week ☐

b) Twice a week ☐

c) More than twice a week ☐

d) Occasionally ☐

SECTION B : Document schedule

30.Body mass index

a) Underweight = <18.5 ☐

b)Normal weight = 18.5–24.9 ☐

c) Overweight = 25–29.9 ☐

d)Obesity = BMI of 30 or greater ☐

31. Diagnosed cause of infertility

a) Polycystic ovarian disease ☐

b) ovarian cysts/ tumours ☐

c) Tubal blocks ☐

d) Hormonal imbalances ☐

e) Unexplained ☐

f) Others ☐

32.Hormonal imbalance ☐

a) TSH

b) FSH ☐

c) Prolactin ☐